

San Francisco Law Library

No.

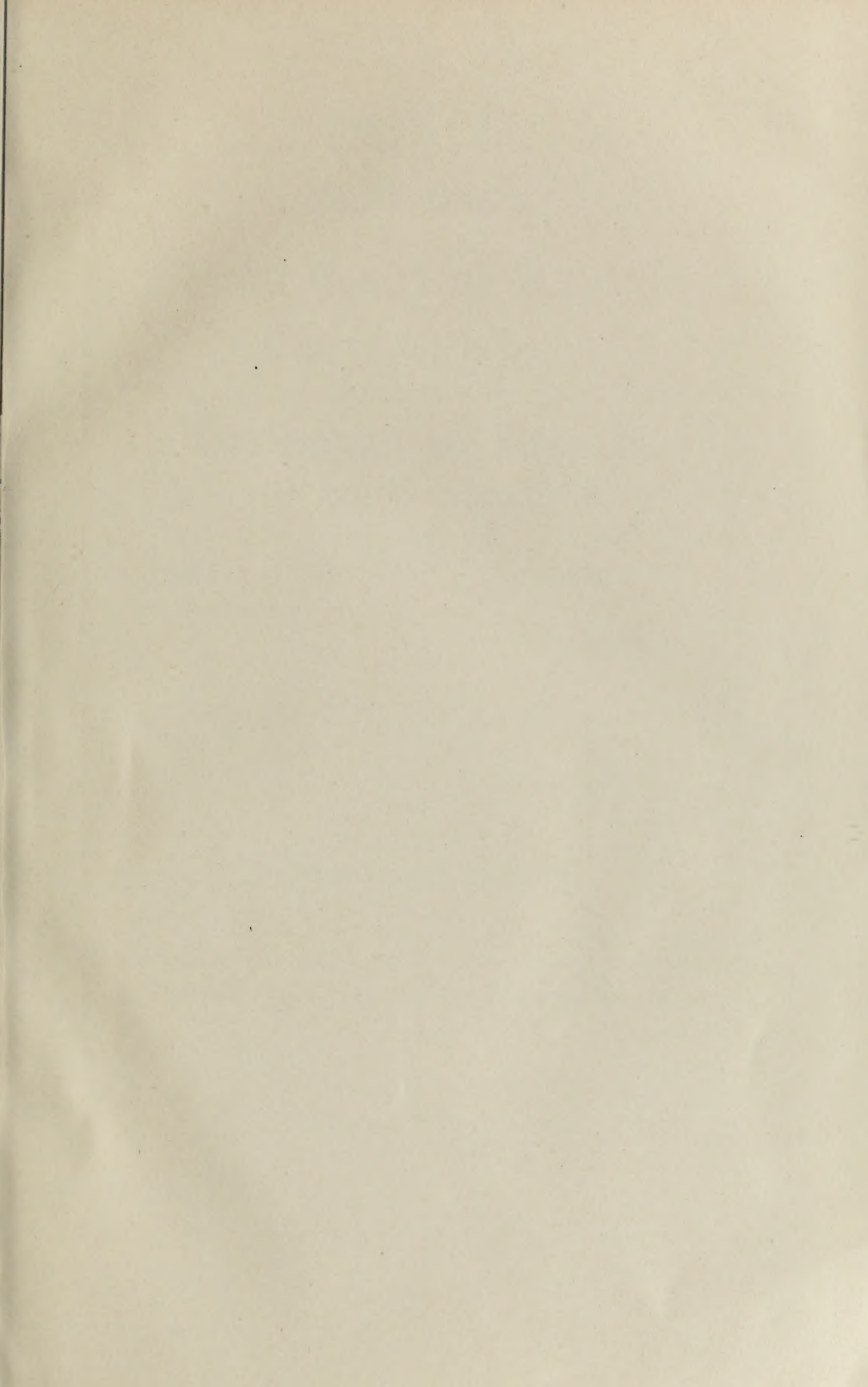
Presented by

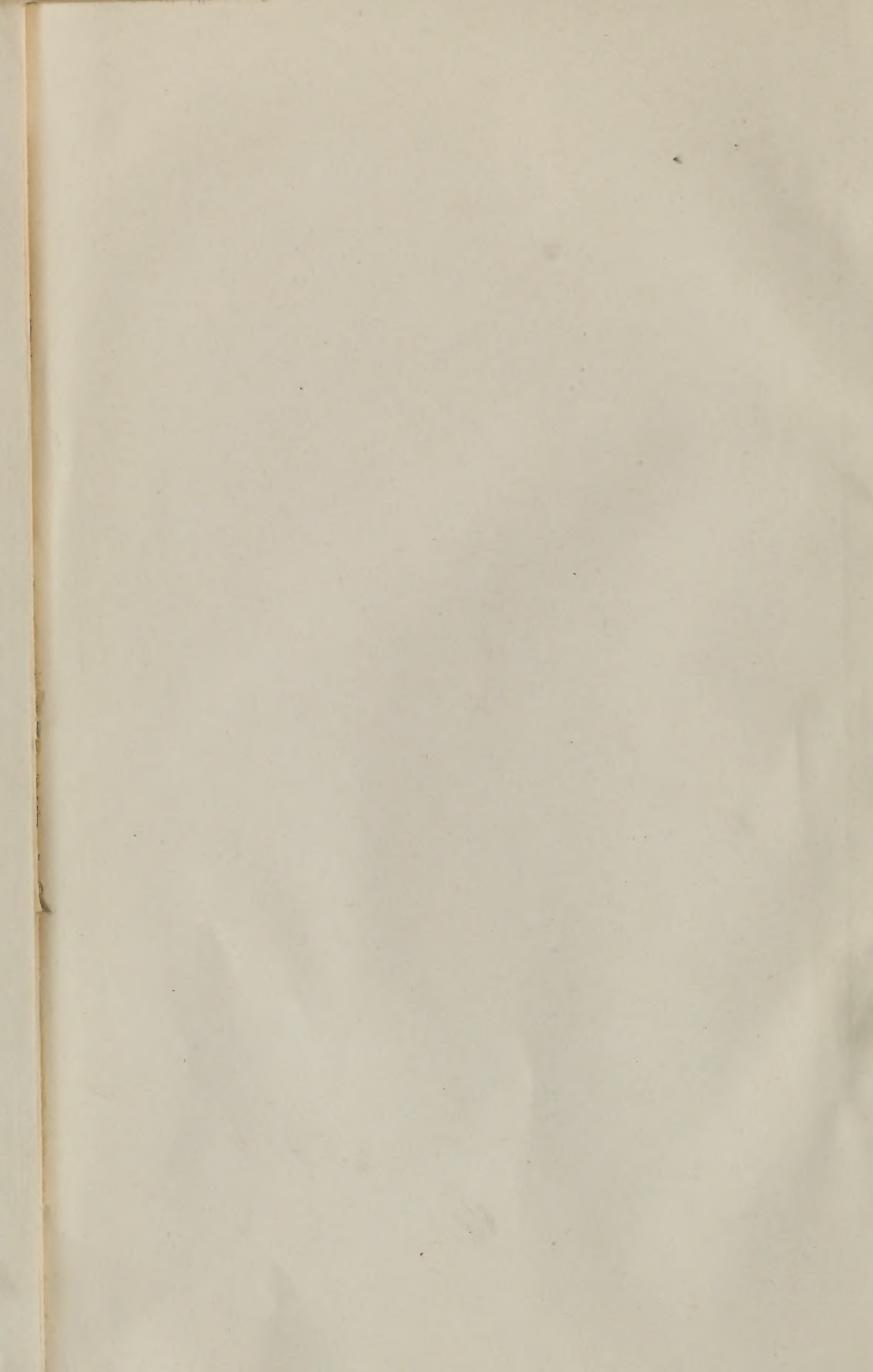
.....

EXTRACT FROM BY-LAWS

Section 9. No book shall, at any time, be taken from the Library Room to any other place than to some court room of a Court of Record, State or Federal, in the City of San Francisco, or to the Chambers of a Judge of such Court of Record, and then only upon the accountable receipt of some person entitled to the use of the Library. Every such book so taken from the Library, shall be returned on the same day, and in default of such return the party taking the same shall be suspended from all use and privileges of the Library until the return of the book or full compensation is made therefor to the satisfaction of the Trustees.

Sec. 11. No books shall have the leaves folded down, or be marked, dog-eared, or otherwise soiled, defaced or injured. Any party violating this provision, shall be liable to pay a sum not exceeding the value of the book, or to replace the volume by a new one, at the discretion of the Trustees or Executive Committee, and shall be liable to be suspended from all use of the Library till any order of the Trustees or Executive Committee in the premises shall be fully complied with to the satisfaction of such Trustees or Executive Committee.





1009

+

1

No. 2759

United States

Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.

(IN THREE VOLUMES.)

COLUMBIA GRAPHOPHONE COMPANY, a
Corporation,

Appellant,

vs.


SEARCHLIGHT HORN COMPANY, a Corpora-
tion,

Appellee.

VOLUME II.
(Pages 353 to 640, Inclusive.)

Upon Appeal from the United States District Court for the
Northern District of California, Second Division.

Filed
APR - 4 1916
F. D. Monckton,
Clerk.



Digitized by the Internet Archive
in 2010 with funding from
Public.Resource.Org and Law.Gov

No. 2759

United States
Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.
(IN THREE VOLUMES.)

COLUMBIA GRAPHOPHONE COMPANY, a
Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corpora-
tion,

Appellee.

VOLUME II.
(Pages 353 to 640, Inclusive.)

Upon Appeal from the United States District Court for the
Northern District of California, Second Division.

THE

NEW

EDITION

OF

THE

NEW

EDITION

OF

THE

NEW

EDITION

3

1

THE

NEW

EDITION

OF

THE

(Deposition of Walter H. Miller.)

Q. 127. Please give the history of this horn which you have just produced, stating when and where and by whom it was used to your knowledge.

A. This horn was used in the recording room of the National Phonograph Company at Orange, New Jersey, some time prior to 1902 and has been used more or less since that time, principally for recording.

Q. 128. Is the horn adapted for reproducing as well as for recording sound and what, if any, has been its use with respect to reproducing sound?

A. This horn can be used as a reproducing horn, but it was used very little for that purpose. That is all that I can remember in regard to that particular horn.

Q. 129. Please state whether or not horns similarly made have been used for reproducing sound from a phonograph?

A. They have. The horn we sold described as the Japan horn, 26 inches long sold by Walcutt, Miller & Co., was a horn very similar to this one.

Q. 130. How do you fix the date of 1902, as the date prior to which this horn was used in the recording room of the National Phonograph Company?
[300]

A. We used these horns for recording original records before the molded record was placed upon the market, which was 1902.

Q. 131. By what individuals was this horn used at Orange, prior to 1902.

(Deposition of Walter H. Miller.)

A. By Mr. Harvey Emmons, Mr. William Hayes.

Q. 132. Did you personally have anything to do with such use by them of the horn?

A. I did. I had charge of the recording department at this time and directed how records should be taken and also assisted in all details connected with recording.

RECESS.

Q. 133. Have you had made and can you produce a photograph of the horn just produced by you as one used in the recording room of the National Phonograph Company at Orange, sometime prior to 1902?

A. Yes, sir, I have and here is the photograph.

By Mr. HICKS.—The horn just produced by the witness and the photograph thereof are offered in evidence and marked respectively “Defendant’s Exhibit, Two-strip Metal Horn Used by National Phonograph Company Prior to 1902, Frank Z. Demarest, Examiner,” and “Defendant’s Exhibit, Photograph of Two-Strip Metal Horn Used by National Phonograph Company Prior to 1902, Frank Z. Demarest, Examiner.”

Q. 134. Please compare the horn of the exhibit just offered in evidence with Fig. 2 of U. S. Patent No. 491,421, of Feb. 7, 1893 to Gersdorff.

A. These two horns are both made of metal and are constructed with the same kind of a seam, the only difference that I can see is that the Gersdorff funnel has three strips instead of two.

Q. 135. Please compare the same with respect to their shapes.

(Deposition of Walter H. Miller.)

A. The Gersdorff funnel is somewhat bell-shaped while the other horn has a gradual taper, from the small end of the large opening.

Q. 136. Does the difference between the shape of a bell and the shape of a cone indicate the difference between the two? A. It does. [301]

Q. 137. Please compare the horn shown in Fig. 14, of the French Turpin Patent and described in that patent with the horn shown and described in the Nielsen Patent in suit.

By Mr. MILLER.—Same objection as to Q. 122.

A. The Turpin Patent Fig. 14 was constructed of strips curved at their edges and bent outward as in the case of the Nielsen Patent. The shape of these strips in order to obtain this shaped horn must be similar to the strips used in the construction of the Villy horn and is shown in that patent under Figure 3. The method of fastening these strips together is the only difference which I can discover.

Mr. MILLER.—We move to strike out the answer on the ground that the description given by the witness of the horn shown in the French patent is different from the description found in the said patent and is not a correct description thereof.

By Mr. HICKS.—Defendant's counsel refers to p. 3, lines 44-103 of the French Turpin Patent to show that the statement of Mr. Miller is not correct.

Q. 138. Referring again to Fig 2 of the Gersdorff Patent No. 491,421, please state what must be the formation of the strips composing the horn or funnel shown thereby.

(Deposition of Walter H. Miller.)

By Mr. MILLER.—Same objection be interposed as to Q. 122 and also that the description of the patent is the best evidence.

By Mr. HICKS.—The Nielsen Patent in suit does not in the description thereof, define the formation of the edges of the tapering strips composing the Nielsen horn, and the same seems to be true of the Gersdorff Patent, except in so far as the descriptions of the patents are supplemented by the drawings thereof. Therefore the question is asked of the witness.

A. In order to make a funnel of this shape the strips must be of a similar shape to that described in the Villy Patent, Fig. 3.

Q. 139. I call your attention to the statement of Gersdorff Patent No. 453,798, p. 1, lines 49–53, and to the statement of the Gersdorff Patent No. 491,421, p. 1, lines 36–37, to the effect that the funnel is constructed or formed of two, three or more longitudinal [302] sections, only three sections, however, being shown in the drawing. Is there any reason why in constructing the Gersdorff funnel or horn only three such sections should be employed?

By Mr. MILLER.—Same objection as to Q. 122.

A. Not that I know of.

Q. 140. Please look at U. S. Design Patent No. 34,907 of August 6, 1901, to McVeety and Ford and U. S. Patent No. 699,928 of May 13, 1902, to McVeety & Ford for a ship's ventilator and state whether you have ever made a horn for phonographs

(Deposition of Walter H. Miller.)

similar to the ventilator shown in those two patents.

A. I have.

Q. 141. Please produce the same, if you can.

A. Here it is.

Q. 142. Please give the history of the phonograph horn produced by you in answer to the last question.

A. This was an experimental model made to be used in a cabinet. The object of the cabinet was to conceal the horn made in this shape so that it would come from the reproducer down under the phonograph. The exact date at which this horn was made I cannot say, but it was around the latter part of 1908 or 1909.

Q. 143. You seem to have employed in the construction of this horn the lap seam and several of the tapering strips with curved edges forming the larger end of the horn consist of two pieces soldered together with the lap seam. Please explain why in making this horn you employed such methods of construction.

A. The only reason I can remember just now is we did not have metal strips long enough and soldered two pieces together. The lap seam was used because when you are experimenting you do not know just what shape the strips should be and the lap seam is more convenient.

Q. 144. Is the horn which you have just produced, one adopted for the successful reproduction of sound from a sound record used upon a phonograph?

A. It is. [303]

Q. 145. Referring to the McVeety and Ford Pat-

(Deposition of Walter H. Miller.)

ents mentioned in the previous question, please state whether or not the instruments there described and shown are adapted for use as horns for phonographs and similar machines.

A. Yes, they can very easily be made to reproduce sound. The shape of this funnel is similar to the large end of the horn I have just produced.

By Mr. HICKS.—The horn and the photograph thereof just produced by the witness are offered in evidence and marked respectively “Defendant’s Exhibit, Miller’s Horn for Phonograph, Employing for its Larger End a Part Like the Ventilator of the McVeety and Ford Patents, Frank Z. Damerest, Examiner” and Defendant’s Exhibit, Photograph of Defendant’s Exhibit, Miller’s Horn for Phonograph Employing for its Larger End a Part Like the Ventilator of the McVeety and Ford Patents, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—Objected to on the ground that the horn is not constructed in accordance with the McVeety and Ford Patents.

Q. 146. Did you take any part in designing the Edison Cygnet horn?

A. I did. I made the first model. I cannot tell you the exact date, but could if I referred to my notebook. It was some time in the year, 1908.

Q. 147. Have you here present the model that you made of the Edison Cygnet horn about 1908?

A. I have. Here it is.

Q. 148. It appears that this model of the Cygnet horn consists of ten tapering strips of metal hav-

(Deposition of Walter H. Miller.)

ing curved edges joined together by lap seams and that the head or small end of the model horn is not so long as it is in the Edison Cygnet horn put upon the market. Please explain why you used the lap seam in constructing the model, the lock seam being employed in the commercial article, and why the neck or small end is shorter than in the commercial article.

A. I used the lap seam in the construction of this horn for the same reason as I stated when I made the other horn. I found it more convenient. This horn was turned over to the superintendent of the company by the manager who told the superintendent to put this horn in shape for manufacturing purposes and the result of [304] his endeavors, the outcome of which is the present Cygnet horn, was placed upon the market.

Q. 149. Is this the original model of the present Cygnet horn? A. It was.

Q. 150. As a manufacturing proposition, would you have continued to use the lap seam after you had determined the proper proportions of the horn by constructing the model? A. I would not.

Q. 151. Why?

A. I would much prefer to use the lock seam in which case it would be much easier to assemble the horn which I have produced.

Q. 152. Please compare the lap seam used in the model with the butt seam of the Nielsen Patent with respect to the ease or difficulty of assembling the tapering strips composing the horn.

(Deposition of Walter H. Miller.)

A. I have never made a horn employing the seams such as used in the Nielsen Patent, or butt seam and I would prefer for ease of construction to use the lap seam in preference.

By Mr. HICKS.—The horn just produced by the witness and the photograph thereof are offered in evidence and marked respectively “Defendant’s Exhibit, Miller’s Original Model of the Edison Cygnet Horn, Frank Z. Demarest, Examiner” and “Defendant’s Exhibit Photograph of Defendant’s Exhibit, Miller’s Original Model of the Edison Cygnet Horn, Frank Z. Demarest, Examiner.”

Q. 153. Please state, if you know what was the custom or commercial practice of the National Phonograph Company in the year 1902, and prior thereto with respect to supplying horns for use with the Edison phonograph made and sold by it.

A. It was the practice of the National Phonograph Company during the period, if a phonograph was ordered from them, to supply with this phonograph, a speaking tube, a hearing tube and a small horn about fourteen inches long. These three accessories were sold as part of the phonograph. These small horns were not generally accepted by the public as the best reproducing horn and it was the custom of the dealers who handled phonographs to sell them a horn [305] and stand to hold the horn at an additional price. These horns and stands would be furnished by the National Phonograph Company if ordered specially by the dealers. But in many cases it was the custom of the dealers

(Deposition of Walter H. Miller.)

to buy this equipment from outside concerns.

Q. 154. Please state briefly the lengths and other dimensions and the material composing the horns sold by the dealers in 1902 and prior thereto at a separate price.

A. These horns were of various sizes, from twenty-four inches in length to fifty-six inches in length having an opening at the large end from one to two feet. The materials used, of which these horns were made, were brass, tin and paper.

Direct examination closed.

Cross-examination by Mr. MILLER.

XQ. 155. Please state your first connection with the phonograph business.

A. My first connection with a phonograph was some time during the year 1888, when I was assigned a position by Mr. Edison to thoroughly familiarize myself with the machine which he was then experimenting on in order that I might be perfectly capable of exhibiting same.

XQ. 156. How old were you at that time?

A. I was eighteen years old or a little over.

XQ. 157. At what place did this occur?

A. At the Edison laboratory, Orange, New Jersey.

XQ. 158. I understand that Mr. Edison was then experimenting with a phonograph. Is that correct?

A. It is.

XQ. 159. How long did you remain with him in that employment?

A. I remained on the pay-roll in the Edison laboratory until the North American Phonograph Com-

(Deposition of Walter H. Miller.)

pany went into the hands of a receiver, about September, 1894. My position with the North American Phonograph Company was to exhibit the phonograph to such people as they desired but I always drew my salary in the laboratory. [306] I presume that Mr. Edison billed them for my services.

XQ. 160. Was the North American Phonograph Company an Edison Company?

A. As far as I know it was not.

XQ. 161. What phonographs did that company handle?

A. It was a company formed to handle the Edison phonograph and the talking machine called the graphophone.

XQ. 162. Now give me the exact year you were with that company?

A. I said in my previous testimony I believe as near as I can remember it was some time in the year 1888, or it may have been a year later.

XQ. 163. Your first connection in that line was with the National Phonograph Company which was handling an Edison phonograph and it was not Mr. Edison, personally. Is that so?

A. My first connection in handling the Edison phonograph was with Mr. Edison personally and under his direction.

XQ. 164. And that was in 1888 or thereabouts?

A. It was.

XQ. 165. How long did you remain in that personal relationship with Mr. Edison and where did you go after that personal relationship ceased? I

(Deposition of Walter H. Miller.)

am merely trying to get a connected statement of your experience in the business.

A. After I was transferred to the North American for exhibiting the phonographs I was constantly in personal relationship with Mr. Edison as he was always interested in what was going on in the North American Company.

XQ. 166. Now, when were you transferred to the North American Company?

A. I should say, as near as I can remember, some time in the latter part of 1888 or 1889.

XQ. 168. And did you stay with that company until it went into the hands of a receiver some time in 1894? A. I did.

XQ. 169. While you were with the North American Phonograph Company what reproducing device did they use in connection with a phonograph?
[307]

A. The reproduction from a phonograph was obtained at this time by means of the horn and multiple hearing tube.

XQ. 170. Describe the multiple hearing tube.

By Mr. HICKS.—Objected to as immaterial.

A. The multiple tube is an arrangement of several lengths of rubber tubing and was used to connect the reproducer of the phonograph to your ears.

XQ. 171. In answer to XQ. 169 you spoke of a horn in connection with the multiple hearing tube. Please describe that horn.

A. There were several kinds of horns used at the

(Deposition of Walter H. Miller.)

time varying from fourteen inches in length to five foot long.

XQ. 172. It is not plain from your testimony what the connection was, if any, between the horn and the multiple hearing tube. Do you mean that sometimes a horn was used and sometimes the multiple tubes? Please describe the whole thing so that it can be understood by a person reading the description.

A. I mean the reproduction of sound at this time was obtained in two ways. One way, by means of a horn and the other way by means of hearing tubes.

XQ. 173. Now, please describe the horns that were used at that time.

A. As I said in a previous answer, horns of various sizes were used at that time. As near as I can recollect the one that was most generally sold was the one which I exhibited a photo of in "Defendant's Exhibit, Photograph of Horn Showing the Condition of Horn Shown by Defendant's Exhibit, Photograph of Horn Used by the National Phonograph Company, in May, 1897, before the Small End Thereof was Cut Off."

XQ. 174. When the North American Phonograph Company went into the hands of a receiver in 1894 what business did you then go into in connection with phonographs and how long did you remain therein?
[308]

A. When the North American Phonograph Company went into the hands of a receiver the secretary of the company, Mr. Cleveland Walcutt, and two other people purchased from the receiver the record-

(Deposition of Walter H. Miller.)

ing plant of that company and organized the firm of Walcutt, Miller & Co. I remained with this concern until February, 1896.

XQ. 175. Did the North American Phonograph Company discontinue business after its assets were sold out? A. It did.

XQ. 176. What business did Walcutt, Miller & Company carry on?

A. We manufactured original phonograph records and sold phonographs and phonograph cabinets.

XQ. 178. What phonograph did that firm sell?

A. The Edison phonograph only.

XQ. 179. What horns were used in connection with that phonograph?

A. As near as I can remember, the horns which were used when we sold a phonograph outfit at that time was the horn mentioned in my answer to XQ. 173.

XQ. 180. What became of the firm of Walcutt, Miller & Company?

A. I retired from this firm in February, 1896, and after that date the firm of Walcutt, Leeds and Company continued the business.

XQ. 181. On retiring from the firm what business did you then enter?

A. I then became associated with the concern called the Phonograph Record and Supply Company, but did not stay long with this concern and resigned in March, 1897, and in May, 1897, became connected with the National Phonograph Company, Orange, New Jersey.

(Deposition of Walter H. Miller.)

XQ. 182. Since that time did you remain continuously connected with the National Phonograph Company?

A. I have and during this time the National Phonograph Company's name has been changed to Thomas A. Edison, Incorporated.

XQ. 183. When you went to work for the National Phonograph Company in 1894 what horns were the company using in connection with its machines? I mean by that what horns were being sold for use with the machines? [309]

A. At that time when a dealer ordered a phonograph it was understood that the company would supply him with a phonograph horn known as a fourteen-inch horn, a hearing tube, speaking tube, oil can and a camel's hair brush.

XQ. 184. What were those hearing and speaking tubes used for?

A. The speaking tube was used to record speech and the fourteen-inch horn was used to both record and reproduce speech. The hearing tube was furnished to anyone who wished to use them to hear the reproduction of speech.

Adjourned to Monday, September 15, 1913, at 10:30 A. M., same place.

September 15, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

Mr. MILLER resumes the stand.

XQ. 185. Prior to the time when the Edison Cygnet horn was put on the market what was the stand-

(Deposition of Walter H. Miller.)

ard horn sold by the National Phonograph Company for reproducing purposes in connection with the Edison phonograph?

A. It was what I call the Edison straight horn. It was about thirty inches long and varied from fourteen to twenty inches at the bell.

XQ. 186. Do you know who designed that horn for the National Phonograph Company? A. I do not.

XQ. 187. Has the National Phonograph Company sold large numbers of that horn?

By Mr. HICKS.—Objected to as immaterial.

A. I do not know.

XQ. 188. Has the National Phonograph Company sold large numbers of the Cygnet horn?

A. I do not know.

XQ. 189. Do you know what satisfaction the Edison straight horns [310] have given to the users or purchasers thereof?

A. As far as I know they have given satisfaction.

XA. 190. Is the National Phonograph Company still marketing the straight horn?

A. I think they are.

XQ. 191. And also the Cygnet horn?

A. I think so.

XQ. 192. You spoke of having experimented with a large number of horns or rather having had to do with the designing of a large number of horns. I think you said about two hundred or more. Over what period of time did that extend?

A. I would say from the year 1888 to the present time.

(Deposition of Walter H. Miller.)

XQ. 193. Did Mr. Edison personally have anything to do with the matter of the horns?

A. He was always experimenting on the phonograph and horn.

XQ. 194. For what particular purposes did Mr. Edison make the forty-foot horn referred to by you on direct examination?

A. I do not know whether it was his intention at the time to build this horn for recording or reproducing. I know, however, he tried it for both purposes.

XQ. 195. Have you had any personal experience in the tinsmith art? A. I have.

XQ. 196. Was that your trade? A. No, sir.

XQ. 197. Did you ever serve at any place as such?

A. I worked at the bench in the machine-shop a short time.

XQ. 198. For how long a time?

A. Possibly, a year.

XQ. 199. Was that before you went to work for Mr. Edison, or after?

A. When I first went with Mr. Edison in the fall of '87.

XQ. 200. At what time were the perfected records placed on the market for use with the Edison phonograph?

A. The biggest step in the improvement in Edison records was when the molded record was placed upon the market, January, 1902. At the time this record was brought out there was brought out with it a new improved reproduced. The combination of these two

(Deposition of Walter H. Miller.)

improvements [311] in my opinion was the biggest step in the advancement of the phonograph art.

XQ. 201. Prior to that time, what records were used? Just describe the conditions of affairs in that regard.

A. The musical records placed on the market prior to this time were what we called mechanical duplicates. These records were made of a softer material than the molded records and were duplicated from original records by a mechanical process.

XQ. 202. Was it difficult to make those mechanical duplicates exactly alike?

A. It was easy enough to make the mechanical duplicates alike, but nowhere near as good as the original records from which they were duplicated.

XQ. 203. How was that in regard to the molded records?

A. In the case of the molded record they were identical with the original record, and their superiority was also appreciated, due to hardness and toughness of the material of which the molded record was made.

XQ. 204. Was the molded record a product of Mr. Edison's?

A. The molded record was the product of Mr. Edison's and Mr. Aylesworth and myself.

XQ. 205. Now, you spoke of an improved reproducer which was brought out with the molded record in January, 1902. Just describe briefly how that differed from the old reproducer.

A. This improved reproducer was equipped with a button ball stylus which was the shape of the groove

(Deposition of Walter H. Miller.)

across its diameter, which was about a forty-thousandth of an inch. Its other dimension was fifteen thousandths. The shape of this button ball allowed it to get into the record groove much more aptly than the old time round ball. The reproducer weight was also made heavier. If a reproducer of this kind were used on the old-style, mechanically cut records they would wear out very quickly. This reproducer also had a buildup [312] mica diaphragm.

XQ. 206. I judge from what you say in this regard that January, 1902, practically marked the beginning of the commercial success of the modern phonograph and that was due principally to the molded record and the new reproducer, which you have already described. Am I correct in this assumption?

A. I might state in answer to this that the largest number of records made in a day by the old mechanical process was about fifteen thousand. Some time after the molded record was on the market our output increased to a hundred thousand a day.

XQ. 207. Is it a characteristic of Mr. Edison to be very careful and particular with regard to producing perfection, or as near perfection as possible, in all the various parts of his phonograph? A. It is.

XQ. 208. My understanding is that it is his desire or aim when he takes up a problem never to stop short of perfection or practical perfection. Is that a characteristic of the man?

A. My observations have been that he has always done the best he could in developing his inventions.

XQ. 209. From the fact that a horn may be a good

(Deposition of Walter H. Miller.)

horn for recording purposes does it necessarily follow that that horn is equally good for reproducing purposes? A. No, it does not.

XQ. 210. Can you tell me why that is?

A. Every reproducing horn can be used as a recording horn. But usually in reproducing a large horn is preferable. If too large a horn is used for recording it will, under certain condition, utter more sound than the recorder can take care of, that is to say, the recorder will be too sensitive.

XQ. 211. In using the horn for recording, does the person speak or sing into the large end of the horn?

A. He does.

XQ. 212. Is that sound which is so injected into the large end of the horn then recorded in the wax cylinder? A. It is. [313]

XQ. 213. In your use of horns which you have spoken of on direct examination, have you had more to do with their use as recording horns than as reproducing horns?

A. I would say that I have made more recording horns or made them with a view to using them as recording horns, but since in the process of recording it is also important to use a reproducing horn. I have always been interested in the use of the best reproducing horn.

XQ. 214. What horn is used at the present time in the Edison laboratory for recording purposes?

A. We use about eight to ten different styles of horns. For most of our vocal work we use a horn about thirty inches long, which varies from five

(Deposition of Walter H. Miller.)

to eight inches at the bell and for our band work we use horns which vary from eight inches to eighteen inches.

XQ. 215. Why do you use a smaller horn for vocal than for instrumental music in making up records?

A. Because the results obtained are much better.

XQ. 216. To what is that due?

A. I have always attributed it to the fact that the resonance of the larger horns is much lower than of the horns we are now using for our vocal work.

XQ. 217. You have several times spoken of the use of horns by the National Phonograph Company. Did you refer to the use in the laboratory?

A. I did.

XQ. 218. Was the laboratory where these horns were so used open generally to the public, that is to say to anyone who wanted to go in there and look at things?

A. Our laboratory was always open to dealers or those interested in this particular line.

XQ. 219. But otherwise, I presume it was kept more or less secret. Is that true? [314]

A. Nothing in the use of horns, that I can remember, was thought to be a trade secret. At our laboratory at Orange all our horns of various descriptions were kept on a long table about two hundred feet long, *aside* of the passageway which was used as entrances to our recording rooms.

XQ. 220. On direct examination you spoke of a Mr. Atz and Mr. Edward Meecker. Are those gentlemen still in the employ of Thomas A. Edison, Incor-

(Deposition of Walter H. Miller.)

porated? A. Mr. Meecker is. Mr. Atz is not.

XQ. 221. What has become of Mr. Atz?

A. I do not know, but I think he is still living and could be found, if required.

XQ. 222. What are his initials?

A. I do not remember, but I think his first name was Louis.

XQ. 223. You also spoke of Mr. Harvey Emmons. Is he still in the employ of Mr. Edison?

A. He is.

XQ. 224. You have referred to the French patent of Turpin, No. 318,742, of February 17, 1902. Have you read the specification of that patent in its entirety? A. I have not.

XQ. 225. From what source did you derive the information regarding that patent, which you gave on your direct examination? A. From Mr. Hicks.

XQ. 226. Do you read French? A. I do not.

XQ. 227. You referred on your direct examination to a Mr. William Hayes. Is he still in the employ of the company?

A. He has now charge of our London recording department.

XQ. 228. Are you familiar with the publication of Mr. George E. Tewksbury, of the Edison phonograph which was referred to on the motion for preliminary injunction by Mr. Hicks and from which certain extracts were used? A. I am not.

XQ. 229. Did you ever read that publication?

A. I might have seen it at some time.

XQ. 230. But I understand that you do not now

(Deposition of Walter H. Miller.)

recall the fact. Is that correct? A. It is. [315]

Cross-examination closed.

RECESS.

Redirect Examination by Mr. HICKS.

RDQ. 231. Since recess have you read the complete translation of the French Turpin Patent No. 318,742 of February 17, 1902, in connection with the drawings forming part of the printed Patent Office copy of said patent? A. I have.

RDQ. 232. Please produce the translation and the printed Patent Office copy of said French Patent to Turpin referred to in the preceding question and answer. A. Here it is.

By Mr. HICKS.—The patent and translation thereof just produced by witness are offered in evidence and marked “Defendant’s Exhibit, French Patent No. 318,742 of Feb. 17, 1902, to Turpin and translation Thereof, Frank Z. Demarest, Examiner.”

The correctness of the translation will hereafter be proved unless upon examination, complainant’s counsel will consent to the correctness of the translation subject, however, to the correction of any error that may appear therein.

By Mr. MILLER.—Complainant’s counsel reserves the right to object.

RDQ. 233. Now, that you have read the full translation of the French Turpin Patent in connection with the drawings thereof, do you find any reason for changing or modifying your testimony heretofore given with respect to the French Turpin Patent?

A. I do not.

(Deposition of Walter H. Miller.)

RDQ. 234. Please refer to the funnel made of one piece of sheet material at the small end of the Edison straight metal horn and at the small end of the horn shown in Fig. 5 of the Villy United States and British Patents heretofore referred to and state what is the capability thereof for the reproduction of sound from a phonograph record, the flaring or large ends of the horns having been removed.

A. When the flares are removed from both of these horns they still will reproduce sound.

RDQ. 235. Upon your cross-examination reference was made to Mr. Edison's experiments with regard to the phonograph in 1888. Do you [316] know whether Mr. Edison is experimenting with regard to the phonograph to-day? A. He is.

RDQ. 236. And what is true of the time between 1888 and to-day with regard to the experiments by Mr. Edison upon the phonograph?

A. He has always been more or less to this day experimenting on the phonograph. In fact, for the last year and a half he has devoted most all of his time to that work.

RDQ. 237. Excepting the horn forty feet long made by Mr. Edison in 1888 or 1889, have you known of Mr. Edison devoting his attention during his experiments to horns for phonographs from that date down to the present day?

A. I have not, except about a year ago I saw ~~him~~ experimenting on a horn for a cabinet machine, but this was more an experiment of suspending a horn so that it would feed automatically.

(Deposition of Walter H. Miller.)

RDQ. 238. Do you mean that the reproducing point was to be carried by the small end of the horn and then fed by a feed-screw mechanism across the surface of a disc-sound record? A. I do.

RDQ. 239. Do you know whether Mr. Edison has obtained in the United States patents relating to the phonograph? A. Yes.

RDQ. 240. Has he obtained a large number of such patents? A. He has.

RDQ. 241. Do any of Mr. Edison's patents relating to the phonograph cover a horn for the phonograph?

By Mr. MILLER.—Objected to as incompetent and not the best evidence.

By Mr. HICKS.—If the witness knows of any such patent, the patent itself will be produced.

A. None that I know of unless he has recently obtained a patent on the feeding device for a horn.

RDQ. 242. Upon your cross-examination reference was made to hearing tubes used in connected with the phonograph in the early days. Please state whether hearing tubes are used today in connection with the phonograph. A. They are.

RDQ. 243. For what purpose are the hearing tubes used to-day? [317]

A. Principally for the reproduction of speech, and especially where the phonographs are used for dictating purposes.

RDQ. 244. For what purpose were the hearing-tubes in the early days referred to on your cross-examination?

A. They were used for the same purpose.

(Deposition of Walter H. Miller.)

RDQ. 245. When the North American Phonograph Company was organized in 1888 to exploit the phonograph and the graphophone, what was the field of use then contemplated for these two instruments?

A. For dictating purposes only.

RDQ. 246. Do you mean that the phonograph and graphophone were to take the place of stenographers and other writers? A. They were.

RDQ. 247. Was any other use of the phonograph or graphophone then contemplated?

A. None, to my knowledge.

RDQ. 248. About when did these instruments begin to go into use for amusement purposes?

A. Shortly before or about the time the National Phonograph Company was organized.

RDQ. 249. Upon your cross-examination you were questioned with regard to the time when commercial success was obtained in the phonograph business and you stated that the number of records made increased when the molded record was put upon the market in January, 1902. Can you give a more definite statement of the number of cylindrical sound records manufactured by the National Phonograph Company before and after 1902?

A. The year ending February 28, 1908, the National sold 87,690 records. The year ending February 28, 1899, 428,310 records. The year ending February 28, 1900, 1,886,137. The year ending February 28, 1901, 2,080,132. The year ending February 28, 1902, 1,976,645. The year ending February 28, 1903, 4,382,802. The year ending February 28, 1904, 7,663,142.

(Deposition of Walter H. Miller.)

RDQ. 250. Does the successor of the National Phonograph Co., Thomas A. Edison, Inc., manufacture to-day as many sound records as the [318] National Company made and sold in 1904?

A. They do not.

RDQ. 251. What have you to say with regard to the possibility of using a horn for the reproduction of sound from phonograph records made during the time when the North American Phonograph Company was in business and thereafter, for such period of time as the same conditions may have continued?

A. In the early days of the phonograph business it was very difficult to get a loud record and horns would not reproduce them satisfactorily, and hearing tubes were used for the purpose.

RDQ. 252. How long a time did this condition of the phonograph record continue, so that reproduction of sound from the records by means of a horn was unsatisfactory?

A. The change from the use of the hearing tube to the horn was a gradual one and as near as I can remember started from a period of about 1895, till I might say, the present day as hearing tubes are still in use.

RDQ. 253. If the horns that were used for the reproduction of sound from a phonograph record during the time when the North American Phonograph Company was in business were used to-day with a phonograph record such as has been made since the year 1900, say, what would be the kind of sound reproduction obtained with such horns?

(Deposition of Walter H. Miller.)

A. We would get a good reproduction.

RDQ. 254. Can you produce any of the catalogues put out by the National Phonograph Company about the years 1899 and 1900, showing the policy of the National Company with regard to the supplying to the public of horns to be used with the phonographs?

By Mr. MILLER.—That is objected to as incompetent.

A. I can; here they are.

RDQ. 255. Please state the dates of the two catalogues which you have just produced and the form numbers thereof.

A. One is form No. 78, dated November 1, 1899; the other is form [319] No. 121, dated April, 1900.

RDQ. 256. Were these two catalogues issued by the National Phonograph Company at the dates mentioned? A. They were.

RDQ. 257. To whom were these catalogues principally supplied by the National Phonograph Company? A. To their dealers and jobbers.

By Mr. HICKS.—The two catalogues produced by witness are offered in evidence and marked respectively in this suit, "Defendant's Exhibit, Catalogue of National Phonograph Co. Form No. 78, November 1, 1899, Frank Z. Demarest, Examiner," and "Defendant's Exhibit Catalogue of National Phonograph Co., Form No. 121, April, 1900, Frank Z. Demarest, Examiner."

RDQ. 258. Please refer to the two catalogues just produced and state briefly the kind of horns for phonographs shown therein and the policy of the Na-

(Deposition of Walter H. Miller.)

tional Phonograph Co. with regard to supplying horns set forth therein.

A. According to catalogue, form 121, April, 1900, the National Phonograph Company had in stock to supply its dealers a fourteen inch horn, eighteen inch horn, twenty-four inch horn, thirty inch horn, a thirty-six inch horn, forty-two inch horn, a forty-eight inch horn, a fifty-six inch horn. All these different types of horns are under a heading "Hammered Brass horn with spun bell." Under the heading of Japanese tin horns they have a ten inch horn, a fourteen inch horn, a twenty-six inch horn and a fifty-six inch horn. The catalogue states that the fifty-six inch horn is intended for exhibition purposes. It has a twenty-two inch bell and is collapsible. The three sections nest in a space twenty-two by twenty-two by twenty. Catalogue also states we sell a special tin recording horn for five dollars. All this data can be found on p. 41. In the other catalogue, form No. 78, dated November 1st, 1899, under a heading "Hammered Brass Horns with Spun Bells" they have listed a fourteen inch horn, eighteen inch horn, twenty-four inch horn, thirty inch horn, thirty-six inch horn, forty-two inch horn, forty-eight inch horn and a fifty-six inch horn. Under a heading [320] "Japanese Tin horns" they have listed a twenty-six inch horn and a fifty-six inch horn. There is also a note which says the *fifty-six horn* is intended for exhibition purposes. It has a bell twenty-two inches in diameter, is collapsible. The three sections nest into a space twenty-two by twenty-two by twenty

(Deposition of Walter H. Miller.)

inches. This information is on p. 33. As I said in one of my former answers that if a dealer ordered a phonograph it was understood that he would only receive a speaking tube, oil can, brush, small horn and hearing tube, but that the company had the policy of selling what was called outfits. These outfits contained different equipment for the machine according to the price. Of course the more equipment to the outfit, the more expensive it was according to the number of records in the outfit, the size of the horn and the number of blank records as well as other equipments furnished. These outfits are published in form No. 78 dated November 1st, 1899, on p. 9, p. 13, p. 14, p. 16, p. 17, p. 22, p. 23. The catalogue also shows a model of the Edison concerns machine on p. 19. It seems in this case the policy of the company was to include the twenty-four inch horn as part of the phonograph, as it says, on the foot of the page "Every Edison concert phonograph includes, free of charge, an automatic reproducer, a recorder, a sapphire shaving knife, oak-body box and cover, a twenty-four inch brass horn and stand, winding crank, speaking-tube, oil can and chip brush."

RDQ. 259. Throughout these two catalogues there are illustrations of phonographs and phonograph parts including horns, are there not? A. There are.

RDQ. 260. Please look at the cover of the catalogue, form No. 121, of April, 1900, and state what material the bell-shaped horn shown on the front and back of the cover is made.

(Deposition of Walter H. Miller.)

A. They are made of brass.

RDQ. 261. Did you know of the firm Hawthorne & Sheble in Philadelphia?

A. I have heard of them.

RDQ. 262. Do you know Mr. Hawthorne or Mr. Sheble of that firm? [321] A. I do.

RDQ. 263. In what business was the firm of Hawthorne & Sheble up to the year 1900 and where?

By Mr. MILLER.—This question is objected to as not being proper redirect examination and I ask that the objection be interposed to all questions regarding the subject matter without further repetition.

By Mr. HICKS.—Defendant's counsel on cross-examination of the witness brought out only the fact that the National Phonograph Company used and sold only a very small horn as a part of the phonograph. It is the purpose of the present redirect examination to show that in addition the National Phonograph Company and other manufacturers were supplying the dealers and to the public many different kinds of larger horns for phonographs.

A. They were manufacturers of horns of various styles and sizes at Philadelphia.

RDQ. 264. Can you state when the National Phonograph Company had accumulated a sufficient stock of the new molded records to put the same on the market and what the extent of the stock then was?

A. The new molded record was placed on the market about January, 1902. At that time we had over five hundred selections recorded and over 122,000 molded records in stock.

(Deposition of Walter H. Miller.)

RDQ. 265. Referring to Defendant's Exhibit, papier-maché horn used by Walter H. Miller, before March, 1904, which bears a label having printed thereon "Crane Bros. Westfield, Mass.," please state how such horns came into the possession of the National Phonograph Company two or three years previous to the removal of its laboratory, the removal of the laboratory having taken place in 1904, as stated in your answer to Q. 107.

By Mr. MILLER.—Objected to as not redirect examination.

By Mr. HICKS.—On cross-examination defendant's counsel attempted to show that there was some secret about horns used in the National Phonograph Company.

A. The first horn of this kind was sent to our recording rooms by some of the officials of the company, just who I do not remember. [322] After using this horn and trying it out, I instructed the purchasing agent to secure some more for me. I do not know who made these horns but heard at the time they were made by some concern in Connecticut or Massachusetts.

RDQ. 266. Did the purchasing agent comply with your instructions? A. He did.

RDQ. 267. Have you still any other samples of horns like the one offered in evidence?

A. We have.

RDQ. 268. Are they of the same size or of different sizes?

A. They are the same as the ones shown.

(Deposition of Walter H. Miller.)

RDQ. 269. Have you any horn like the Mega horn or Kaiser horn that has been offered in evidence. And if so, are they of the same size or of different sizes?

A. We have megaphones in our laboratory of a larger size and I think we have a model of about the same size as this one. It may be a shade smaller.

RDQ. 270. Referring to defendant's exhibit, two-strip metal horn used by National Phonograph Company, prior to 1902, please state how that horn came into the possession of the National Phonograph Company, and by whom was it made?

A. That horn was ordered made by the National Phonograph Company and was manufactured by the Tea Tray Company.

RDQ. 271. When the order was given to the Tea Tray Company what were the directions given by the National Phonograph Company?

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial and not the best evidence.

A. It was customary in ordering horns from this company to give them the length of the horns required and the diameter, to tell them the material which we wanted the horns made of and the thickness of this material.

RDQ. 272. How did it happen that the Tea Tray Company made these horns of two tapering strips of metal extending from one end of the horn [323] to the other and joined together at their edges by lock seams so made that the thickness of the ribs formed by the seams is on the outside and not in the

(Deposition of Walter H. Miller.)

inside of the horn.

By Mr. MILLER.—Same objection.

A. I do not know.

RDQ. 273. Was the Tea Tray Company instructed to construct the horn in that manner.

By Mr. MILLER.—Same objection.

A. They were not.

RDQ. 274. Of what material are the Edison straight horn and the Edison Cygnet horn made?

A. Of tin. There is also a model of the Cygnet horn made of wood and tin. The straight horns are made of tin.

RDQ. 275. What part of the Edison Cygnet horn is made of tin, and what part is made of wood when tin and wood are used to construct the Cygnet horn?

A. The body part of the horn is made of tin and the flare or bell shape is made of wood.

RDQ. 276. Has the Edison straight horn ever been made of wood?

A. There is a horn of a very similar shape made of wood. I do not recollect the name of it at the present time.

RDQ. 277. Describe how this horn of wood, that is similar to the Edison straight horn, is made.

A. It is made of tapering strips of wood slightly curved at their edges and bent outward. The edges of these tapering strips of wood are held together by small strips of wood glued on the inside of the horn.

RDQ. 278. Do you mean bent outward at the large end? A. I do.

(Deposition of Walter H. Miller.)

RDQ. 279. Is this a horn dealt in by Thomas A. Edison, Inc.?

A. I do not remember ever selling this type of horn.

RDQ. 280. Does the Victor Talking Machine Company handle such a type of horn?

A. Not that I know of. [324]

RDQ. 281. Has the National Phonograph Company or Thomas A. Edison, Inc. ever engaged in the manufacture of horns for phonographs?

A. Not that I know of, except that they are now making some special shaped horns which are used in hornless cabinets which are becoming popular.

RDQ. 282. Has there been any recent change in talking machines which affects the use of the reproducing horns theretofore used?

A. There has. The public are beginning to discard the usual horns that had been in use and are calling for concealed horns.

RDQ. 283. How many manufacturers of talking machines are there in the United States to-day?

A. Three, possibly four. The Edison, the Victor, the Columbia and I do not know whether the United States Phonograph Company is still in existence.

RDQ. 284. About when did the Victor Talking Machine Company begin the manufacture of talking machines? A. That I do not know.

RDQ. 285. When did Thomas A. Edison, Inc., begin to make disc records?

A. Thomas A. Edison, Incorporated, has been experimenting with this talking machine for the last

(Deposition of Walter H. Miller.)

three years. They have not been out on the market, to my knowledge, over a year.

RDQ. 286. Is the Edison disc machine an improvement or not over the Edison cylindrical machine?

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial and not redirect examination.

A. It is an improvement.

RDQ. 287. Has the Edison disc talking machine ever employed any horn other than the one concealed in a cabinet? A. They have not.

RDQ. 288. Has the Edison disc record involved any change in the material of the record?

By Mr. MILLER.—Same objection.

A. It has.

RDQ. 289. Has it involved any change in the reproducing apparatus? [325]

By Mr. MILLER.—Same objection.

A. It has not.

RDQ. 290. Has it introduced any change in the material of which the reproducing stylus is made?

A. The reproducing stylus used on the disc machine is made of diamond while the reproducing point used to reproduce the molded record is made of sapphire.

RDQ. 291. What is the cause of this change from the sapphire to the diamond.

By Mr. MILLER.—Same objection.

A. It was found that the heavy weight used on the reproducer causing the point to bear harder on the record would wear sapphire and therefore diamond

(Deposition of Walter H. Miller.)

was adopted. But recently Mr. Edison has placed upon the market a new cylinder record called the Blue Amberol which is made of much tougher and harder material than the former molded record. It was then found that the reproduction could be much improved by the use of a heavy weight and the diamond point has been adopted for the cylinder record as well as for the disc.

RDQ. 292. Is the Blue Amberol Edison record made in the cylindrical form or is it also made in the disc form?

A. It is made in the cylindrical form only.

RDQ. 293. Has there been any recent change in the number of threads per inch of the record grooves and if so, what is the change and has it been applied to the disc as well as to the cylindrical record?

A. Since 1908 the company has adopted the form of records whose grooves are finer than has ever been placed on the market before in order that the record would have a larger capacity. The new disc record that has been placed upon the market has a feed of 150 threads to the inch. The present blue amberol of to-day has 400 threads to the inch and the old style record 200 threads to the inch.

Redirect examination closed.

Deposition closed. [326]

Adjourned to Tuesday, September 16, at 10:30 A. M., same place.

September 16, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

[Deposition of Harvey Nesbitt Emmons, for
Defendant.]

HARVEY NESBITT EMMONS, being duly sworn, as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. Harvey Nesbitt Emmons, age 37, 158 North 15th St., East Orange, N. J.; professional record maker.

Q. 2. By whom are you employed?

A. By Thomas A. Edison, Incorporated.

Q. 3. When did you enter the employ of Thomas A. Edison, Inc., or the National Phonograph Company? A. October the 8th, 1897.

Q. 4. Have you been continuously employed by the National Phonograph Company or Thomas A. Edison, Inc., since October 8, 1897? A. Yes, sir.

Q. 5. Do you know Walter H. Miller?

A. Yes, sir.

Q. 6. Has your work been in any way connected with Mr. Miller since October 8, 1897?

A. Yes, sir.

Q. 7. Please state what that connection has been.

A. I have been Mr. Miller's assistant in recording master records.

Q. 8. Please look at the horn which I now show you and which has been marked in evidence "Defendant's Exhibit, Two-strip Metal Horn," etc., and state what, if anything, you know about this horn.

(Deposition of Harvey Nesbitt Emmons.)

A. That horn was used in the latter part of 1897 or the early part of 1898.

Q. 9. Where was it used?

A. It was used at the Edison recording laboratory at West Orange, New Jersey.

Q. 10. Was that the laboratory of any company?

A. At that time it was the laboratory of the National Phonograph Company. [327]

Q. 11. By whom was this two-strip metal horn used in the latter part of 1897 or the early part of 1898?

A. It was used both by Mr. Miller and myself.

Q. 12. For what purpose? A. For recording.

Q. 13. Please state whether this two-strip metal horn is adapted for reproducing sound from a phonograph record.

A. It could be used for reproducing as well as recording.

Q. 14. Please look at this other horn which I now show you and which has been offered in evidence and marked "Defendant's Exhibit, papier-maché horn," etc., and state what you know about this horn.

A. We used that horn both for reproducing and recording at the laboratory.

Q. 15. Where?

A. At the laboratory at West Orange.

Q. 16. The laboratory of the National Phonograph Company? A. Yes, sir.

Q. 17. At what time?

A. I would say the first time the laboratory used this horn was in the year 1898.

Q. 18. Who used this horn at the laboratory of the

(Deposition of Harvey Nesbitt Emmons.)

National Phonograph Company at Orange, in the year 1898?

A. Mr. Miller and myself used that horn in the recording department.

Q. 19. Please state in what manner this papier-maché horn was used in reproducing.

A. It was hung from a crane with a tube on the end to connect with the reproducer.

Q. 20. What sound records did you reproduce by the aid of this horn and for what purpose?

A. The master records made in the recording laboratory, reproducing the master records that we made in the laboratory.

Q. 21. Why did you reproduce sound from the master records made in the laboratory by the aid of this horn?

A. We reproduced the records to get a balance between the numerous instruments that were used in the recording. By this I mean that [328] one instrument should not be louder than any other instrument used in the different combinations which we made records of.

Q. 22. When you used this papier-maché horn to reproduce the sound recorded on the master record, the only effect was to reproduce the sounds as recorded, is this correct? A. Yes, sir.

Q. 23. And do you mean that in such reproductions of sound from the master records you were enabled to determine whether in the recording of the master record a proper balance of the instruments used for producing the sounds recorded has been employed?

(Deposition of Harvey Nesbitt Emmons.)

By Mr. MILLER.—That question is objected to as leading.

By Mr. HICKS.—In view of the objection the question is withdrawn. The purpose of defendant's counsel was to save time.

Q. 24. I do not understand what you mean when you say that this papier-maché horn was used to reproduce the master records to get a balance between the numerous instruments that were used in the recording. Please make this clear.

A. For instance, if we were recording a band, which had anywheres from eighteen to twenty-one instruments we would have to get a perfect balance between the cornets, trombones, clarinets and other instruments that the band was composed of.

Q. 25. In reproducing sound from the master record you could not change the balance of the recorded sounds, could you?

A. No, sir. Not after the record had been once recorded.

Q. 26. Did you use this horn then to ascertain whether the balance of the instruments used for the recorded record had been a proper balance?

A. We called these test records until we got the proper balance and then we would make what we call a master.

Q. 27. As I understand the point you used this horn to test original records to ascertain whether the balance mentioned was proper and that after you had obtained the proper balance of the instruments you then proceeded to record a master record.

(Deposition of Harvey Nesbitt Emmons.)

A. Yes, sir. [329]

Direct examination closed.

Cross-examination by Mr. MILLER.

XQ. 28. When you use a horn for recording purposes in the laboratory in making records how do you use it?

A. We have various combinations of one horn, two horns, three horns, whichever the combination of recording would suit.

XQ. 29. Does the operator speak or sing or play into the big end of the horn and is the sound then carried through the small end and recorded?

A. Yes, sir.

XQ. 30. If a horn is a good one for recording, would it necessarily follow that that same horn would be good for reproducing when connected to a phonograph? A. Yes, sir.

XQ. 31. When you first went to the National Phonograph Company's laboratory in 1897, what horn or style of horn was being used for recording?

By Mr. HICKS.—Objected to as not proper cross-examination, the witness having been questioned on his direct examination solely with respect to two horns and the witness was produced merely because complainant's counsel, on the cross-examination of Mr. Miller had inquired concerning the whereabouts of Mr. Emmons.

A. We were using various horns of different diameters at the large end. The metal horn that was shown to me by Mr. Hicks was used for recording bands, banjoes, brass quartets, etc.

(Deposition of Harvey Nesbitt Emmons.)

XQ. 32. Is it usual in making records to use different styles of horn according to the different species of sound you desire to record or to illustrate, do you use the same horn for recording a vocal solo as you do for recording a band concert of numerous pieces?

A. At certain times the same horn could be used according to the temperature of the room or weather. We do use the same horn at times for recording.

XQ. 33. Is it the general custom, however, to use different horns in the two cases stated?

A. I would not say it was the general custom but we do vary the horns on different selections. [330]

XQ. 34. In recording what is the object of having the horns of different diameters at the large end?

A. We use them more for focusing combinations of larger or smaller number.

XQ. 35. What is the largest diameter horn used for recording in the Edison laboratory?

A. Fifty-six inch.

XQ. 36. Do you know who made this papier-maché horn which was shown you by Mr. Hicks?

A. No, sir, I do not.

XQ. 37. Do you know when you first saw this horn?

A. In the latter part of 1897 or the early part of 1898.

XQ. 38. Is that horn being used at present for recording purposes in your laboratory?

(Deposition of Harvey Nesbitt Emmons.)

A. We have not used that horn in the last six months.

XQ. 39. What horns are now used in the laboratory for recording?

A. I use various size horns at the bell.

XQ. 40. Give the variations in size, if you can.

A. From three inches in diameter to fifty-six inches.

XQ. 41. Was there more than one of these papier-maché horns in your laboratory, used for recording?

A. Yes, sir, we have used as many as thirteen for recording.

XQ. 42. Do you mean that that number of them were used at one time? A. Yes, sir.

XQ. 43. Now please, describe briefly in outline, the process of making a record of a band concert consisting of a number of different instruments.

By Mr. HICKS.—The objection made to XQ. 31 is repeated and it is to be understood that the same objection is made to all questions not directed to the matter inquired about upon the direct examination.

A. At the time we used these papier-maché horns, 1898, there were thirteen machines and the band was arranged in front of these horns according to the volume of sound each instrument had. The clarinet would be placed three to four foot away while the cornets would be back twelve foot from the horn, etc. The band would then play a [331] small part of the selection, which would be used as a test record to see if we had the proper balance. If not, they would be moved back or forward according to

(Deposition of Harvey Nesbitt Emmons.)

their balance. After these tests were all made we found that we arrived at the balance; the master records were then made.

XQ. 44. I understood you to say that at the present time you make your record in a different way from what you did in 1898. Is that correct?

A. Yes, sir.

XQ. 45. When was that change introduced in your laboratory?

A. I could not say the date or time because it gradually worked itself to a different way of working, that is, we now record with one machine whereas, in 1897 and 1898, we recorded with thirteen for a band.

XQ. 46. When you say we now record with one machine, do you mean with one horn? A. No, sir.

XQ. 47. You mean then with one recording machine? A. Yes, sir.

XQ. 48. And how many horns do you use with that one recording machine? A. From one to five.

XQ. 49. And what character of horns are they?

A. They vary in size from three inches at the bell to fifty-six inches.

XQ. 50. Of what material are those horns made?

A. Paper, brass, zinc, tin, lead, aluminum, copper.

XQ. 51. You spoke of using this papier-maché horn which is before you for testing the record after its manufacture and before the master record was made with a view to ascertaining the balance. Please explain how that attempt was made, so that we can fully understand it.

(Deposition of Harvey Nesbitt Emmons.)

A. This horn was put on a diaphragm in connection with a rubber tube. The record was put on the phonograph, the machine started and the diaphragm reproducer was let down on the record and that way we would hear the record as it was recorded. [332]

XQ. 52. Was this diaphragm you referred to the same diaphragm that was used in the phonograph itself when put out for sale?

A. The reproducer was the same at that time.

XQ. 53. What do you mean by the reproducer?

A. The reproducer had the little sapphire ball end that followed the track and would reproduce the record as it was.

XQ. 54. When you tested these records in the laboratory after they were made to see whether they were right did you have a special testing apparatus for that purpose? A. No, sir, not at that time.

XQ. 55. Do you have such special apparatus at the present time? A. Yes, sir.

XQ. 56. Are the present records which you make a great improvement over those you made in 1898?

A. Yes, sir.

XQ. 57. After you make your record at the present time, do you then test it for the balance which you refer to? A. Yes, sir.

XQ. 58. Describe how you make that test.

A. The instruments are placed in position and play a few bars which are placed on the reproducing apparatus and heard, to get the proper balance.

XQ. 59. How do you determine whether you have got the proper balance?

(Deposition of Harvey Nesbitt Emmons.)

A. By the loudness and quality of each individual instrument.

XQ. 60. What horn do you use for the reproducing in this connection so as to determine the balance?

A. They use a Cygnet horn for reproducing.

XQ. 61. When did the company cease using the papier-maché horns before you for reproducing?

A. That I could not say.

XQ. 62. Do you think this papier-maché horn when attached to one of the other phonographs in actual use would be a good horn for reproducing at the present time? A. Yes, sir.

XQ. 63. Do you think it is as good a horn in that respect as the Edison Cygnet horn? A. No, sir.

XQ. 64. Do you think it as good a horn in that respect as the Edison straight horn? A. Yes, sir.

[333]

XQ. 65. Do you think it as good a horn in that respect as the two-strip metal horn which was shown you by Mr. Hicks?

A. I would say it would be just as good. I have never compared these two horns side by side.

XQ. 66. Are you acquainted with the old B. & G. horn having a conical body and a flaring brass bell, used years ago with phonographs? A. Yes, sir.

XQ. 67. Do you think this papier-maché horn is as good a horn for reproducing as the old B. & G. horn referred to? A. Yes, sir.

XQ. 68. Do you think the old B. & G. horn referred to is as good a horn for reproducing as the

(Deposition of Harvey Nesbitt Emmons.)

Edison straight horns? And by the Edison straight horn I mean the horn shown on pp. 18 and 19 of the Edison catalogue of cylinder models from 1912 and 1913, which I now show you.

A. I think that is all a matter of taste.

XQ. 69. Please explain what you mean by a matter of taste.

A. The Edison Cygnet horn when you compare it will be fuller than the Edison straight horn and some people would like or prefer the Cygnet horn to the straight horn.

XQ. 70. My question related, not to the Cygnet horn, but to the Edison straight horn as compared with the old B. & G. horn of which Mr. Hicks showed you a cut. Now please compare those two horns and give me your opinion as to which of those is the better horn if there is any difference in their reproducing properties.

A. I have never made a comparison of these two horns so could not say.

XQ. 71. I am only asking your opinion as a person familiar with this art.

A. I would prefer the Edison straight horn.

XQ. 72. Will you please give any reason you may have for that preference? A. Looks.

XQ. 73. Have you made any test of the reproducing qualities of the Edison Cygnet horn with any other horn?

A. We have tested the Edison straight horn and the Cygnet horn. [334]

XQ. 74. Please describe how you made those tests.

(Deposition of Harvey Nesbitt Emmons.)

A. By taking a record and placing it on the machine, first putting one horn on hearing a certain part of the record we would put the other horn on and hear the same part played on that horn. In that we could determine which sounded best to us.

XQ. 75. Did those tests show any difference in the results of the two horns?

A. The Edison Cygnet horn sounded the better of the two.

XQ. 76. Is the Edison Company still engaged in supplying the Edison straight horns for some of its phonographs?

By Mr. HICKS.—This line of cross-examination is entirely unwarranted and is objected to. Complainant's counsel is interrogating the witness upon matters concerning which he may not be qualified and upon matters having not even the remotest relation to the direct examination.

A. That I could not say. It is not in my department.

XQ. 77. I judge from your answer that you are specially acquainted only with matters relating to your department, which is that of making records, and that you practically know nothing about any other of the extra doings of the Edison Company. Am I correct in this?

A. Outside of what we use in the recording department, you are.

Cross-examination closed.

(Deposition of Harvey Nesbitt Emmons.)

Redirect examination by Mr. HICKS.

RDQ. 78. On cross-examination you said that the Edison Cygnet horn is used to-day to test sound records. What kind of records is that Cygnet horn used to test? A. In my answer, master records.

RDQ. 79. I refer to the shape or form of the record. Is the Cygnet horn used to test disc or cylindrical records, please state the facts in this regard.

A. The Cygnet horn is used for testing cylinder records, master records. It is not used at the present time for testing the disc records. [335]

RDQ. 80. Was the Cygnet horn ever used to test disc records? A. Not to my knowledge.

RDQ. 81. Was any horn used by the Edison Company to test disc records?

A. Yes, sir, we used the Edison straight horn.

RDQ. 82. Why has the Edison straight horn been used to test disc records instead of the Edison Cygnet horns?

A. There was no particular reason for using this horn only it was convenient for taking off and putting on our testing machine.

RDQ. 83. Has any apparatus been devised whereby the Edison Cygnet horn with its curved swan-like neck could be used for testing the flat disc record? A. Yes, sir, it could be used.

RDQ. 84. My question was whether any apparatus has been devised by the Edison Company, by the aid of which the Edison Cygnet horn can be so used?

A. We did have an apparatus, a special machine,

(Deposition of Harvey Nesbitt Emmons.)

which could be used for testing master records with the Cygnet horn.

RDQ. 85. Why did you not use that special apparatus for the Cygnet horn instead of using the straight horn to reproduce sound from the disc record?

A. The way our machine was situated in our test room we found that the Edison straight horn was more convenient for use at that time.

Redirect examination closed.

Deposition closed.

RECESS.

HARVEY NESBITT EMMONS, being recalled as a witness on behalf of defendant, for further redirect examination, testifies as follows:

Redirect examination continued by Mr. HICKS.

RDQ. 86. Is the Edison straight horn used to-day for testing disc records made by the Edison Company? A. No, sir. [336]

RDQ. 87. When was the use of the Edison straight horn discontinued for the testing of disc records and why was it discontinued?

A. It was discontinued because Mr. Miller had a regular disc machine with a concealed horn cabinet. This seemed much more convenient for our company in the testing room.

RDQ. 88. When did Mr. Miller receive, in the recording department, the regular disc machine provided with a concealed horn in a cabinet?

A. I cannot just recall the date of it but they have been using it a year and a half or two years.

(Deposition of Harvey Nesbitt Emmons.)

RDQ. 89. When was it that the Edison Company perfected its disc machine having a horn concealed in a cabinet to such an extent that the company was in a position to supply Mr. Miller with such a machine?

A. The machine that Mr. Miller received was set in one of the old Amberola cabinets.

RDQ. 90. At the time that Mr. Miller received this machine was the Edison disc machine perfected? A. That I could not say.

RDQ. 91. Was it on the market?

A. That I could not say.

RDQ. 92. For how long a time was the disc machine set in the Amberola cabinet employed for testing the original disc sound records?

A. We had this machine between a year and a half and two years, as far as I know.

RDQ. 93. Are you still using it for testing original sound records? A. Yes, sir.

RDQ. 94. Are you using any other machine for testing original disc sound records at the present time? No, sir.

RDQ. 95. Approximately, what is the shape of the horn concealed in the Amberola cabinet?

A. It is more of an oval shape.

RDQ. 96. Like the shape of an egg?

A. On that order.

RDQ. 97. Referring to the papier-maché horn concerning which you have already testified, state whether you employed for recording [337] or reproducing any similar horn or horns, and if so, de-

(Deposition of Harvey Nesbitt Emmons.)

scribe the same and state when you employed them.

A. At the present time we are not using any horn like the one you showed me for recording or reproducing. We are using the Edison straight horn which is the nearest thing to the one you showed me.

RDQ. 98. I am referring to horns made of paper or like material.

A. No, sir, not at the present time. We have used horns like this and horns similar to the size only it was not finished. It was in rough, which were used both for recording and reproducing. In 1901, the rough paper horn was used. The horn that you show me here was used between 1897 and 1898.

RDQ. 99. Compare the shape of the rough paper horn that you used in 1901 with the shape of the papier-maché horn that you used in 1897 to 1898.

A. They were practically the same shape and size.

RDQ. 100. Compare the two horns with regard to color.

A. The rough paper horn was sort of a gray; the other horn was black, with a gold band.

RDQ. 101. Is the diaphragm that you mentioned in your testimony a part of the reproducer of the phonograph? A. Yes, sir.

Redirect examination closed.

Recross-examination by Mr. MILLER.

RXQ. 102. Have you in the laboratory now one of the rough paper horns which you say was used in 1901 in your answer to RDQ. 98?

(Deposition of Harvey Nesbitt Emmons.)

A. I don't think we have in the recording laboratory.

RXQ. 103. Is there one in the Edison laboratory.

A. Not that I know of.

Recross-examination closed.

Deposition closed. [338]

[Deposition of Edward W. Meeker, for Defendant.]

EDWARD W. MEEKER, being duly sworn as a witness on behalf of defendant, testifies as follows:

Direct examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. Edward W. Meecker, 39 years old, residence 58 Day Street, Orange, New Jersey, employed by the Thomas A. Edison, Inc. recording department.

Q. 2. How long have you been employed by Thomas A. Edison, Inc., or by the same company under its former name of National Phonograph Company? A. In the fall of 1897.

Q. 3. Have you been employed by that company from the fall of 1897 down to the present day?

A. I was employed from the fall of 1897 to the first day of May, 1898, when I left to go to the Spanish-American War. I was discharged from the United States service in October, 1898, re-employed by the same company in October, 1898. I have been in their employ to this present day.

Q. 4. I show you a photograph and ask you if you know anything about the horn shown in the photograph.

(Deposition of Edward W. Meeker.)

A. That is a horn I used for making announcements.

Q. 5. When did you use this horn for making announcements?

A. When I was first employed by the phonograph company in 1897.

Q. 6. Was that before you went to the Spanish-American War? A. Before and after.

Q. 7. Where did you use this horn for making announcements when employed by the National Phonograph Company in 1897 and before you went to the Spanish-American War?

A. In a little brick building opposite the Edison laboratory engine-room at Orange, New Jersey, and also in a building that they called No. 20, a large wooden building. We continued to use the same horn up to 1901 when we changed the system of recording.

Q. 8. Where did you use this horn for making announcements after your return from the Spanish-American War in October, 1898? [339]

A. In the little brick building opposite the laboratory engine room.

Q. 9. The small end of the horn appears to have been cut off. Please state why this was done.

A. The end was cut off to allow a hole sufficiently large enough to talk through so that it would throw the sound out.

Q. 10. Please explain what you mean by announcements for which you used the horn.

A. To tell the name of the selection, what was to

(Deposition of Edward W. Meeker.)

play, a band or an orchestra or a brass quartet or anything.

Q. 11. That is to say, before the band began to play or the singer began to sing you made an announcement of the piece or selection by means of this horn, so that the name of the selection and of the singer or band could be recorded on the sound record before the recording of the vocal or instrumental piece was recorded? A. Yes.

Q. 12. What has become of the horn shown in the photograph which I have just handed to you?

A. The last time I saw it was in this office.

Q. 13. Was that at the time that you verified your affidavit in this suit, on June 5, 1913? A. Yes.

Q. 14. Where do you understand that the horn is at present? A. In California.

Q. 15. Did you see that photograph at the time you last saw the horn and verified your said affidavit? A. Yes, sir.

Q. 16. Was that photograph a correct photograph of the horn at the time you last saw it?

A. Yes, sir.

Q. 17. Was there any difference in the horn when you last saw it and at the time when you last used it for making announcements? A. No, sir.

Q. 18. Did you ever use this horn for any purpose other than the making of announcements?

A. For reproducing. [340]

By Mr. HICKS.—The photograph which I have just shown to the witness is “Defendant’s Exhibit, Photograph of Horn used by National Phonograph Co. in May, 1897.”

(Deposition of Edward W. Meeker.)

By Mr. MILLER.—If the horn is to be produced in evidence hereafter I have no objection to the photograph; otherwise I will object to the photograph as secondary evidence.

Q. 19. I show you another photograph and ask you to state what you know about the horn shown in this other photograph.

A. This is the same kind of a horn as the other photograph only it hasn't got the end cut off.

Q. 20. Does this second photograph show the condition in which the horn of the first photograph was before its small end was cut off? A. Yes, sir.

Q. 21. State, if you know, for what purpose the horn shown in these two photographs was used in the fall of 1897.

A. Used for reproducing records.

Q. 22. Do you know how long the horn shown in these two photographs had been in use in the United States for reproducing sound from records before you began to use the horn with its small end cut off for making announcements? A. I don't know.

Q. 23. What has become of the horn shown in the second photograph? A. In California.

Q. 24. When did you last see it?

A. I saw it in your office when I made out my affidavit.

Q. 25. Did you see the photograph at the same time? A. Yes, sir.

Q. 26. Is the photograph a correct photograph of the horn? A. Yes, sir.

Q. 27. Who brought the two horns shown in the

(Deposition of Edward W. Meeker.)

two paragraphs to my office at the time you verified your said affidavit in June, 1913?

A. I think they were here when I came in.

Q. 28. Where had they been before you saw them in my office?

A. In the office at Orange, New Jersey.

By Mr. HICKS.—The second photograph shown to the witness is “Defendant’s Exhibit, Photograph of Horn Showing the Condition of the Horn Shown by Defendant’s Exhibit, Photograph of Horn used by National Phonograph Co. in May, 1897, Before the Small End Thereof was Cut Off.” [341]

By Mr. MILLER.—I make the same remark in objection regarding this photograph as was made regarding the former photograph.

Q. 29. Do you know whether the horn shown in the two photographs was upon the market in the United States in the fall of 1897?

A. That I don’t know.

Q. 30. Did you ever see them in the phonograph supply stores for sale?

A. I never paid any particular attention.

Q. 31. Do you know who manufactured such horns?

A. No, sir.

Direct examination closed.

Cross-examination by Mr. MILLER.

XQ. 32. After you ceased using this horn for making announcements in 1901, how were the announcements made thereafter?

A. Made without a megaphone.

XQ. 33. What then became of these horns shown by

(Deposition of Edward W. Meeker.)

the photographs? A. They were in the laboratory.

XQ. 34. Were they used for any purpose?

A. Well, I would use that announcement horn once in a while, standing back, hollering and announcing different sounds.

XQ. 35. Before they were brought over here and delivered to Mr. Hicks, where had they been stored?

A. They were in the recording laboratory.

XQ. 36. Was this little brick building where you made your announcements with this horn open to free access by the public?

A. I really could not answer that question; I don't know. I never saw any secret about it. I know that visitors came there. I invited guests.

XQ. 37. What position did you hold in the company at that time, when you used the horn for making announcements? A. I was announcer.

XQ. 38. What position do you now hold in the company?

A. Singing and general trap work, such as imitating animals.

XQ. 39. What animals have you imitated?

A. Dog, a monkey, a lion, cat, horse whinny, coyote. That is all I can think of now. [342]

XQ. 40. I presume you mean you imitated these sounds so that they could be recorded and a record thereof made for the purposes of reproduction?

A. Yes, sir.

Cross-examination closed.

Deposition closed.

Adjourned to Wednesday, September 17, 1913, at
11 A. M.

Sept. 17, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

[Deposition of Frank H. Stewart, for Defendant.]

FRANK H. STEWART, being duly sworn as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. Frank H. Stewart, age, 34 years, Philadelphia, occupation, engineer, (electrical); previously employed by Messrs. Hawthorne & Sheble as traveling salesman and in assisting in the development of ideas and various sound apparatus at their factory at Oxford and Mascher Sts., Philadelphia; previous to this, in their store at 604 Chestnut St., Philadelphia.

Q. 2. Please state what experience, if any, you have had with regard to the phonograph and similar machines and with regard to horns used therewith.

A. My employment with Hawthorne & Sheble began in 1894. When I entered the employ of Hawthorne & Sheble I was employed as errand boy. In a short while I became very much interested in the phonograph. I took up the study of the phenomenon of sound and sound-recording apparatus. At this time the machines such as we handled were operated by storage batteries, which it was my duty to look

(Deposition of Frank H. Stewart.)

after, the recharging of same, and repair the motor, diaphragms and other adjustments that would naturally come under my direction in repairing and setting up machines. I have an X-ray burn on my right hand. I mention this merely to fix a definite date. This [343] burn occurred while I was operating the Edison X-ray apparatus some time previous to July 6th, 1898, at the electrical exposition given under the direction of Prof. Samuel Marx, a building located on the south side of Chestnut St., between 8th and 9th, and as near as I recall the number of the premises at 820 Chestnut Street, Philadelphia, Pa. Previous to the injury occurring to my hand I did a great deal of experimental work with the phonograph in making sound recording and reproducing apparatus, as our firm, at that time, was one of the largest jobbers of Edison phonographs in the country. Previous to this time, I made a great many experiments which necessitated manufacturing horns, diaphragms and other apparatus and parts useful in the manufacture of phonographic records. About this time the Graphophone Grand was placed on the market by the Columbia Phonograph Company. Different shapes and kinds of horns were made at the factory of Hawthorne & Sheble and were tried out. Horns similar in nature to the horn which is now known as the flower horn were made, but were not made in any commercial quantity for the reason that they would not sell. Brass horns became the popular horn of the time. Some time during the spring of 1898, Hawthorne & Sheble made for the

(Deposition of Frank H. Stewart.)

Government Navy Department some horns; I do not know how many were made, but they were made of several sections and joined together on a long groover that we had in the factory, and were used by the Government as fog-signals. The horns were necessarily made in segments joined together at the edges, because we could not get material wide enough to make the horn in one piece and also because the ridge where the pieces were seamed together on the grooving machine added a reinforcement to the horn. Where these horns are at the present time, I do not know.

By Mr. MILLER.—I move to strike out all that portion of the answer beginning with words “about this time the Graphophone Grand was placed on the market,” etc., down to the end of the answer, on the ground that that portion is not responsive to [344] the question, is also largely a matter of hearsay testimony and constitutes a rambling dissertation on matters concerning which the witness was not interrogated and which therefore makes the matter one difficult of cross-examination. And I request counsel for defendant to instruct the witness to confine himself strictly to the questions asked and not go outside of the scope of the question in giving his answers.

By Mr. HICKS.—The answer was responsive to the question. Defendant’s counsel does not understand that complainant’s counsel can object to an answer upon the ground that it is not responsive unless the answer is to a question put by complainant’s counsel.

Q. 3. Who composed the firm of Hawthorne & Sheble?

(Deposition of Frank H. Stewart.)

A. Ellsworth A. Hawthorne and Horace Sheble.

Q. 4. During what period of time were you employed by the firm of Hawthorne & Sheble?

A. Until about 1903, I think.

Q. 5. Was any change made in the organization of the business of Hawthorne & Sheble during the period of your employment from 1894 to 1903?

A. If there was any change I did not know what the details were for the reason that I was not a member of the firm.

Q. 6. What I meant to ask more particularly was whether at any time from 1894 to 1903 the firm of Hawthorne & Sheble was incorporated.

A. I think they were incorporated. Just what the date was, I don't know.

Q. 7. Do you recollect what the name of the corporation was after the firm was incorporated?

A. I believe it was changed to the Hawthorne & Sheble Manufacturing Company.

Q. 8. What, if anything, did Hawthorne & Sheble manufacture aside from horns for phonographs?

A. The firm of Hawthorne & Sheble manufactured cabinets for phonographs, carrying-cases for records, horn-stands for supporting the horns, and a great many of the supply parts used for the repair of phonographs. [345]

Q. 9. To what extent did the firm of Hawthorne & Sheble manufacture horns for phonographs and similar machines?

A. At the time, we believed we were the largest manufacturers in the country.

(Deposition of Frank H. Stewart.)

Q. 10. How many horns for phonographs and similar machines did the firm of Hawthorne & Sheble manufacture per day?

A. I do not know exactly how many horns were made per day at the factory, but the business was always increasing by reason of the fact that we were always getting up new designs, new models, and new combinations of metals, like zinc, which we sold thousands of under the name of a Silveroid horn. We also made a large quantity of aluminum horns. These aluminum horns were joined together in segments because we could not obtain aluminum in very wide lengths and in this way the horns of aluminum were built up of several sections. The sections were joined together on the grooving-machine, because we did not know how to solder aluminum, and joining the various sections was the only practical way to manufacture a horn made of aluminum in a commercial way.

By Mr. MILLER.—I move to strike out all that portion of the answer beginning with the words “these aluminum horns were joined together in segments, etc.,” down to the end of the answer on the ground that it is not responsive to the question, and is also largely a matter of argument and otherwise improper.

By Mr. HICKS.—Defendant’s counsel will not question the witness further with regard to statements set forth in the answers of the witness and objected to by complainant’s counsel on the ground that the answers are not responsive to the questions

(Deposition of Frank H. Stewart.)

put by defendant's counsel, for the reason that defendant's counsel understands that such objections are without foundation, the answers being relevant, material, and competent upon the issues involved in this suit.

Q. 11. Do you recollect the number of horns manufactured by the firm of Hawthorne & Sheble upon any one day?

A. I think of our style 30-16 horn which was one of the popular styles of brass horns, it was our aim to turn out 500 a day. [346]

Q. 12. And in addition to 500 horns per day of the 30-16 style horn, did the firm of Hawthorne & Sheble on the same day manufacture horns of other styles?

A. Oh, yes. We made a large quantity of the other styles. We had to, to keep up with our orders.

Q. 13. Referring to the expression "30-16 style of horn," please explain what the figures of that expression mean.

A. The figures 30-16 refer to the length and breadth of the horn, 30 meaning the length from the small end to the large end, and 16 the distance across the large end, the small end of the horn being standard for all sizes of horns of the regular style that we made. Of course, we made horns with a larger opening at the apex of the horn, which were used on phonographs equipped with the Bettini reproducer. The figures 30 mean 30 inches and 16 means 16 inches.

Q. 14. Referring to the aluminum horns which you have said were made of segments, please explain by

(Deposition of Frank H. Stewart.)

what method these segments were joined together in building up the horn.

A. In making a horn of aluminum we would take the sheets, which came in uniform lengths of about fourteen inches wide by ninety-six inches long and of the thickness that we determined was proper for the purpose and cut these strips in suitable lengths for the horn which we desired to make. They might be fourteen inches long, eighteen inches long, twenty-four inches long, thirty inches long, thirty-six inches long and forty-two inches long. These sections were cut off on what we called a straight shear. They were then cut across lengthwise, diagonally, making a triangular or pyramid-shaped figure. These strips were next run through a machine that put a curl on each side, something, I might say, like the curl of a derby hat. Two of these sections, which were properly seamed, would be joined together and then additional pieces would be joined one to another until a sufficient number of sections were made in [347] one large triangular piece. Then it would be folded over and made into a cone shape, which, of course, was the horn. On account of the aluminum being very light and thin, in the manufacture of some kinds of horns, especially on the larger sizes, we would endeavor to get as many symmetrical sections put together so as to give the horn a reinforcement. As I recall, our forty-two inch horn, that is a horn that was forty-two inches long, was made up of five or six sections. Each of the sections has been described before as to the shape and our method of manufacturing the horns.

(Deposition of Frank H. Stewart.)

Q. 15. When you united the adjacent sections of the aluminum horns, did the union thereof produce a seam?

By Mr. MILLER.—I object to the question as incompetent and as not the proper way to elicit evidence of an anticipating nature, being in the nature of a cross-examination, and also as leading and suggestive.

By Mr. HICKS.—In view of the objection the question is withdrawn.

Q. 16. Describe the part of the aluminum horn resulting from the joining together of any two adjacent sections thereof.

A. It was simply joined together in a manner known as the tinsmith's seam.

Q. 17. Is there any other term by which such a tinsmith's seam is known?

A. Not to my knowledge. The machines such as we used are common to a great many different branches of sheet-metal workings, such as making stove-pipes, range spouts, etc.

Q. 18. Please look at defendant's exhibit, two-strip metal horn, etc., and compare the union of the two strips of which that exhibit horn consists with the union of the adjacent strips of the aluminum horn made by Hawthorne & Sheble, as described by you.

By Mr. MILLER.—Objected to as leading and suggestive.

A. This seam and this horn are very similar to a type of horn which we made for recording purposes. The aluminum horns which I referred [348] to

(Deposition of Frank H. Stewart.)

were the same as this particular horn in general detail, shape, etc., with the exception of the aluminum horns having four, five, six or seven sections joined together in identically the same manner as the two seams in this particular horn are joined together.

RECESS.

Q. 19. You spoke of having received an X-ray burn prior to July 6, 1898. Please state whether the aluminum horns made by Hawthorne & Sheble as described by you, were made before or after the time at which you received this burn.

A. They were made both before and after.

Q. 20. You referred to the Graphophone Grand Talking Machine put upon the market by the Columbia Phonograph Company. Please state whether the firm of Hawthorne & Sheble made any horn for use with the Graphophone Grand Talking Machine; and, if so, please describe the horn.

A. The aluminum horns we made for the Graphophone Grand were about thirty-six inches long and about the same width across the large end. These horns were made of aluminum because aluminum was light and could be placed on the carriage of the Graphophone Grand, and would support themselves without the horn stand which, of course, was unsightly and in the road, when the machine was being used.

Q. 21. What did these aluminum horns for the Graphophone Grand Talking Machine consist of?

A. They were made of curved tapering sections as have been heretofore described.

(Deposition of Frank H. Stewart.)

Q. 22. How did the tapering sections curve?

A. As I recall, they were curved inwardly on the side so that when they were put together we got a shape not unlike the horn of plenty. This was done to give the horn an artistic appearance.

Q. 23. Of how many sections was the Graphophone Grand horn made up?

By Mr. MILLER.—This method of examination is objected to as incompetent and improper, being leading and suggestive, and not the proper way to prove anticipating matter. [349]

By Mr. HICKS.—In answer to Q. 21, the witness said that these horns were made of curved, tapering sections. The present question merely asks the witness to state the number of the sections.

A. As near as I recall, there were seven or eight, possibly nine, of these sections. My memory is not clear on this as to the exact number.

Q. 24. Describe the union of these curved, tapering sections used in making the Graphophone Grand horn.

A. There was only one way that we could put them together with our machinery. That has already been described to you, by the tinsmith or lock seam. Our horn manufacturing machinery was made to do this.

Q. 25. If you took the different sections of this Graphophone Grand horn apart and placed them side by side flat upon a table, what would be the relation between the edges of the sections nearest to each other?

By Mr. MILLER.—Same objection as before.

(Deposition of Frank H. Stewart.)

A. They would butt together at the two extremes and would have an opening gradually increasing in size according to the curve that the sections were cut upon. With this horn that I have in my hand, if these two seams were placed together they would approximate each other throughout the entire length, that is, on this horn marked with Figure 4. However, with the sections of the aluminum horns, they would not approximate each other, excepting at the small end and again at the large end. However, when these two sections are put over the forming-hook and bent down so that the machine would roll them together, they would be like placing the two sections on the inside of a crescent-shaped hook or bar so that the roller, as it rolled down the seam, would not travel in a straight line, but would go through the arc of a circle, that is, in the part of the horn where it flared out, making the bell or large part of the horn.

By Mr. HICKS.—The horn with the figure 4 thereupon used by the witness in illustration of the answer to the preceding question is “Defendant’s Exhibit, Two-strip Metal Horn.” etc. [350]

Q. 26. For what purpose were these aluminum horns, made for the Graphophone Grand Talking Machine used?

A. They were used to amplify or make the sound larger and give the sound reproduction a better tone.

Q. 27. Was the horn used for reproducing or recording sound?

A. The aluminum horns were used for reproducing sound.

(Deposition of Frank H. Stewart.)

Q. 28. When did the firm of Hawthorne & Sheble manufacture the aluminum horn of curved, tapering sections for the Graphophone Grand Talking Machine?

A. They were made shortly after the Graphophone Grand was placed on the market, which was, I think, in the year 1897. However, to fix this date, it was before my hand was burned with the X-ray, and, of course, they made a great many afterwards.

Q. 29. Please state the different materials from which the firm of Hawthorne & Sheble made horns for phonographs and other similar machines.

A. We made horns of aluminum, brass, steel and zinc and different combinations of the same. For instance, we would make a horn with a brass body and a silveroid or zinc bell and vice versa. We also made another combination with an iron or steel body with a brass bell. The iron or steel body being Japan black or red. In fact, we had several different colors that were made for the market. Some sold and some did not. Of course, those that did not sell we discontinued. It was due to our continual experimenting and putting out different styles of horns that gave us the reputation of being the leaders, and the trade looked forward to the visits of our salesmen so that they could get the latest ideas and styles in horns.

Q. 30. The materials you have mentioned were all metal. Did the firm of Hawthorne & Sheble handle or make any horns constructed of material other than metal?

A. We did. We made horns of fiberoid, which, I

(Deposition of Frank H. Stewart.)

believe, was furnished [351] to us by the Hard Fiber Company of Wilmington, Delaware. Incidentally, these horns were also made in sections, but were not put together with a lock seam. These were riveted together. We also had horns made of glass, which were manufactured for us by the firm of Giltz and Sons. Their factory is located in Philadelphia, on Oxford St. near Front St. The glass horns were made, of course, in one piece, but in shape and design they followed out the general lines which had been adopted by us in the manufacture of our metal horns.

Q. 31. When was it the firm of Hawthorne & Sheble used the metals mentioned by you and the fiberoid and glass mentioned in the construction of horns for phonographs?

A. Almost from the time that we started in to make horns, in fact, from the time we started in the phonograph business, we experimented and made horns of different kinds and of different materials and different shapes.

Q. 32. Of how many strips did the fiberoid horns consist?

A. We made fiber horns which, I think, were listed in our catalogue as special recording horns. These horns, as I recollect, were made of two sections riveted together like No. 4 horn. That is the horn that we sold. We made some horns, I believe, for Mr. I. W. Norcross, who, at that time, was located in the New Zealand Building at 37th and Broadway, New York City. The horns made for Norcross had

(Deposition of Frank H. Stewart.)

probably a dozen sections in them and were made about five or six feet long and were used by him for recording purposes. Of course, we used the horn for reproducing as well. But the general purpose of the horn we made out of fiber with the long sections riveted together were specially designed and used for recording.

Q. 33. When did you make those horns for Norcross?

A. I do not know the exact date when the horns were made for Norcross.

Q. 34. Were you with the company at the time the horns were made for Norcross? [352]

A. I was in the employ of Hawthorne & Sheble at that time.

Q. 35. Can you state how long it was after the horns were made for Norcross that you left the Hawthorne & Sheble concern?

A. It must have been several years, possibly four or five years, now. I think it was 1903 that I left Hawthorne & Sheble.

Q. 36. You have referred to Mr. Bettini. Did the firm of Hawthorne & Sheble handle any horns for phonographs or phonograph attachments put out by Mr. Bettini?

A. We did. I sold lots of Bettini attachments to our customers in Philadelphia before we gave up the store at 604 Chestnut St. Just what date it was that we did give up the store on Chestnut St., I do not recall.

Q. 37. What was the Bettini attachment?

(Deposition of Frank H. Stewart.)

A. The Bettini attachment was made in two parts, or consisted of two members, a recording attachment and a reproducing attachment which fitted on a specially designed sleeve which rolled on the back rod of the phonograph and supported the recording or the reproducing attachment as might be desired by the party using the machine. The recording attachment was a very sensitive apparatus by which records could be made in a very satisfactory manner by almost anyone. The Bettini reproducing attachment was a large ring with an aluminum diaphragm and a spider attachment for carrying the reproducing sapphire. It gave very satisfactory results and as a general thing would play records a great deal better than the ordinary reproducer, which was furnished with the machine. Bettini also made a reproducing attachment, which would only fit on the graphophone.

Q. 38. Did Bettini make any horns for use with his attachment?

A. Bettini sold horns for his attachment. Whether he made them or not, I do not know. But Hawthorne & Sheble made quite a number of horns for Bettini. These horns were made of aluminum.

Q. 39. What was the shape of the horn sold by Bettini for use with phonographs? [353]

A. The Bettini horn was red in color, about eighteen inches long, made in a gradual taper throughout its entire length, the large end being about ten inches in diameter and the small end about an inch and a half in diameter so as to fit on the tube of the reproducer frame.

(Deposition of Frank H. Stewart.)

Q. 40. What do you mean by "a gradual taper"?

A. I mean that the horn was conical shape, having or terminating with a bell-like flare on the large end.

Q. 41. How was this Bettini horn of a gradual taper constructed?

A. This Bettini horn was made of papier-maché.

Q. 42. When did Bettini put this horn upon the market?

A. I do not know the exact date, but I do know that I sold Bettini attachments and Bettini horns prior to 1898.

Q. 43. Were you familiar with a horn known as the Kaiser horn? A. I was.

Q. 44. When did you first know of the Kaiser horn being upon the market?

A. I do not recall when the Kaiser horn was put on the market.

Q. 45. Are you acquainted with John Kaiser?

A. I used to be, but I have not seen John in a number of years.

Q. 46. Do you recollect whether John Kaiser was a member of any copartnership?

A. If my memory serves me right, I think he was the Kaiser of Harms, Kaiser and Hagen.

Q. 47. Do you know whether that firm sold Kaiser horns? A. No, I do not recall.

Q. 48. Do you know whether the Kaiser horn was used by the public?

A. Well, when I used to meet John, according to what John would say, he was selling all of the horns

(Deposition of Frank H. Stewart.)

that were used by everybody on every phonograph that was sold.

Q. 49. For what use were the fog-horns intended, that were made by the firm of Hawthorne & Sheble for the United States Navy? [354]

A. I do not know positively, but believe they were to be used for fog signals.

Q. 50. Where?

A. My recollection is that they were to be used on some of the battleships.

Q. 51. I show you a photograph and ask you whether you know anything about the horn represented in that photograph.

A. Yes, we made them, that is, Hawthorne & Sheble.

Q. 52. When did Hawthorne & Sheble make such horns?

A. 1898. I do not think this horn was ever catalogued, that is, it was not put in our regular line of horns, but when a novelty like this would be gotten up, we would get out a circular and mail the circulars to the trade so as to see how they would sell.

Q. 53. I show you a horn marked "Exhibit B, John H. George, Ellsworth A. Hawthorne" and having a ring secured to the horn by a piece of metal bearing the initials H. S. Is this the horn shown in the photograph?

A. It seems to be. It is either the same horn or a photograph of one of the horns like this that was made.

By Mr. HICKS.—The photograph just shown to

(Deposition of Frank H. Stewart.)

the witness is offered in evidence and marked "Defendant's Exhibit, Photograph of Hawthorne & Sheble's Fluted Horn of 1898, Frank Z. Demarest, Examiner." The horn just shown to the witness is marked for identification "Defendant's Exhibit, for Identification, Hawthorne & Sheble's Fluted Horn of 1898, Frank Z. Demarest, Examiner."

By Mr. MILLER.—May I inquire if the horn will be subsequently put in evidence?

By Mr. HICKS.—If complainant's counsel insists at the trial that this horn be put in evidence and if defendant's counsel obtains the right to take it to San Francisco, at the time of the trial, the horn will be put in evidence. The horn is not the property of defendant's counsel.

By Mr. MILLER.—If the horn is put in evidence, I have no objection to the photograph. Otherwise I shall object to the photograph as not the best evidence.

Q. 54. I show you a photograph and ask you if you recognize what it is.

A. I do. It is a page from our old catalogue.
[355]

Q. 55. What does it show?

A. It shows the glass horn that I referred to heretofore in my testimony.

Q. 56. Please state when Hawthorne & Sheble manufactured and sold glass horns such as are shown on the photograph.

A. They were made and sold previous to the date of our old catalogue, which was printed in 1900.

(Deposition of Frank H. Stewart.)

Q. 57. Can you produce a copy of the catalogue or paper from which this photograph was made?

A. I cannot.

Q. 58. Do you know where a copy of it can be obtained to-day?

A. I have not the slightest idea. I destroyed all of my old catalogues some years ago.

By Mr. HICKS.—The photograph just shown to the witness is offered in evidence and marked “Defendant’s Exhibit, photograph of Hawthorne & Sheble Mfg. Co.’s Advertisement of Glass Horns, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—Objected to as irrelevant, incompetent and immaterial, no sufficient foundation being laid and being evidence of a secondary character.

By Mr. HICKS.—If the original copy of the advertisement from which the photograph was taken, can be obtained, it will be offered in evidence, but defendant’s counsel is not at present able to produce the original copy.

Q. 59. Please give a brief description of other horns made and sold by the firm of Hawthorne & Sheble during the time that you were with that firm from 1894 down to the close of the year 1900.

A. The horns that we made at that time, that is, the commercial horns, were shaped like this in general with a brass bell on the end of them. That was the popular horn and we sold thousands of them. But, the horn that I have just spoken of has nothing to do with the special horns that we made for special

(Deposition of Frank H. Stewart.)

purposes. You understand we made two types of horn. One type, which was like this was a brass bell on the large end, was a popular-priced horn. The other horn was special, cost more money to produce and was not a popular size, although we made quite a number of them. You [356] might add that the conical-shaped horn with a brass bell was not so delicate as the horn made of several sections and could be nested in crates and take up less room in packing.

Q. 60. Did Hawthorne & Sheble make horns constructed by brazing together adjacent edges of metal?

A. We did.

Q. 61. When?

A. From the time we started to manufacture horns.

Q. 62. Please describe the construction of such brazed horns and the material of which they were composed.

A. In answer to your question, the name of the horn to which you refer was our fifty-six inch full spun horn. We made several other sizes and shapes of the full spun style, but I want to describe to you the way and manner in which the fifty-six inch full spun horn was made, as the same general description could be followed by anyone skilled in the art and turn out a horn by following these directions. A piece of brass of the proper size in width, length and gauge was rolled out on a cutting table. Second, a steel templet or gauge is laid on the brass blank. The shape of this templet is or would be exactly the same as used in the horn which is under discussion at the present time, that is, the flower horn. The

(Deposition of Frank H. Stewart.)

edges of these brass pieces are not only tapered but they are curved inwardly and run through the entire section of the horn. Several of these pieces, if my memory serves me right, I think we used five sections which covered an arc of 72 degrees each. These curved inwardly and tapered sections were put over a forming mandrel, and shaped up. After being shaped up they are annealed and the first brazing operation takes place. After several, or as many of the sections as are necessary to form the horn have been joined together, the horn is again put on a mandrel, given its second shaping and annealed. After annealing, it is put on a spinning press or lathe and run up into shape. After being run up into shape, the rough edges are trimmed down and the horn sent to the polishing-room to [357] be buffed and polished.

Q. 63. During what period of time did the firm of Hawthorne & Sheble manufacture horns made according to the method or process described in answer to your last question.

A. We made horns of this type from the time we started to make horns up until the time we went out of business.

Q. 64. That is to say, from what year until what year?

A. Mr. Hawthorne could tell you better what year than I can. But, if you will call his attention to our old full spun horns and ask him about this he will verify my testimony.

(Deposition of Frank H. Stewart.)

Q. 65. I want your personal knowledge. Please state whether the firm of Hawthorne & Sheble made horns according to the process or method just described by you during any part of the time when you were with that firm.

A. My dear sir, when we started to make horns, the only way that we could make a horn that would not vibrate and would have a pure, rich tone was by making the horn by this aforesaid process that I have just described. This horn or this type of horn was used exclusively by us in the retail store for exhibiting our phonographic records. The store I refer to, was our old store at 604 Chestnut St. and I think we gave up the lease on this store in 1900.

Q. 66. You have answered my question indirectly. I want a direct answer. Please state whether the firm of Hawthorne & Sheble manufactured horns according to the method just described by you during any part of the period of your employment by that firm.

A. When I first went to work in the phonograph department, that is, after Hawthorne & Sheble started in the phonograph business, this was the method in use at that time.

Q. 67. Referring to the time when you received the X-ray burn on your hand, which you have said was some time prior to July 6, 1898, please state whether the firm of Hawthorne & Sheble manufactured horns according [358] to the method and process just described by you before or after the time that you received the X-ray burn.

(Deposition of Frank H. Stewart.)

A. They positively and absolutely did it before that time. They were making the horns years before that.

Q. 68. Please state the extent of the strips or sections of the horns made according to that method or process, that is, to say, at what part of the horn did each section begin and where did it end, longitudinally of the horn?

A. The longitudinal section or lengthwise section of the horn began at the tip of the bell and ended at the ferrule where the horn connection was put on. The cross-section was divided into five parts of 72 degrees each.

Q. 69. I show you a book titled "The Therry of Sound in its Relation to Music" by Prof. Pietro Blaserna, published in New York, by D. Appleton & Co., 1876, and refer you to the matter beginning on p. 156, with the paragraph numbered 4, and continuing down to the paragraph beginning on p. 158 with the words "Fig. 37 represents," and ask you if you are familiar with this book and the matter set forth on the pages referred to.

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial, no foundation being laid, leading and suggestive.

By Mr. HICKS.—The foundation is being laid.

By Mr. MILLER.—The foundation is being laid by handing the book to the witness and the witness is now reading it. That is what I object to.

A. I am the owner of the book and have studied it and its contents for a great many years. Being in

(Deposition of Frank H. Stewart.)

the phonographic record recording business and then in the phonograph business, it is my business to be in touch with the scientific as well as the practical sides of the business. Figure 36 represents an apparatus known to science as the phonautograph and makes a tracing of the sound wave on a moving wheel or barrel, which carries a piece of paper and the various sinuosities of the sound wave can be made with precision. Part [359] of the machine shown is a horn made of various or numerous sections which are gradually tapered throughout the entire length of the horn.

By Mr. MILLER.—I move to strike out all that portion of the answer beginning with the words “Figure 36 represents, etc.” to the end as not responsive to the question also as secondary and not the best evidence.

Q. 70. How long have you been familiar with this book?

A. That book was given to me as a Christmas present by Prof. Arnold B. Snider of the Boys’ High School, Philadelphia, Pa., in 1898.

Q. 71. And has the book been in your possession since 1898?

A. It has continuously. In fact, this is the first time, when I presented it to you to-day, Mr. Hicks, that the book has ever been out of my possession since it was presented to me.

By Mr. HICKS.—Defendant offers in evidence the parts of the book referred to and the same is marked “Defendant’s Exhibit, pp. 156, 157 and 158, of Bla-

(Deposition of Frank H. Stewart.)

serna's Work on the Theory of Sound, published in 1876, Frank Z. Demarest, Examiner."

By Mr. MILLER.—I object to the introduction in evidence of the portion of the book as irrelevant, incompetent and immaterial, in that they are only portions of a printed publication. I will not object to the book if it is offered in evidence as a whole and I am perfectly willing to stipulate that after the case is completed, the book may be returned to the owner.

By Mr. HICKS.—The book is at the disposal of complainant's counsel and if he desire to encumber the record with the entire contents of the book he is at liberty to do so.

Q. 72. Are you able from inspection of Fig. 36 of Blaserna's book to tell how the horn of Scott's phonograph shown in that figure was constructed?

A. I am not.

Q. 73. Are you able to tell from the inspection of Figure 36 of what parts the horn of Scott's phonograph shown in that figure consisted?

A. I am not.

Q. 74. What can you tell from the inspection of that figure with regard to that horn?

By Mr. MILLER.—Objected to as secondary evidence. [360]

A. I can tell the size, approximately, and the shape of it from having seen an instrument of this character used at a lecture on sound.

Q. 75. What do the lines running longitudinally of the horn in Figure 36 show, if anything?

By Mr. MILLER.—Same objection.

(Deposition of Frank H. Stewart.)

A. This figure shows the general construction of the horn which was used at the lecture. These lines indicate the sections or segments of which the horn was constructed. It shows the way that they were joined together.

Q. 76. How many sections or segments are indicated in Figure 36 on the portion or side shown in the figure?

By Mr. MILLER.—Same objection.

A. There are six seams shown.

Q. 77. On approximately what portion of the horn do these six seams appear?

A. They appear to be on a section of about 90 degrees or a quadrant of the section of the horn?

Q. 78. How many strips would that make in the construction of the entire horn?

By Mr. MILLER.—Same objection.

A. Twenty-four strips in the horn.

Q. 79. What is the shape of each of the strips shown in that figure 36?

By Mr. MILLER.—Same objection.

A. The strips are tapering throughout the entire length of the horn, extending from the diaphragm to the rim at the bell.

Q. 80. What difference do you find in the construction of the horn of Scott's phonautograph shown in that figure 36 and the construction of horns for phonographs such as were made generally by Hawthorne & Sheble from 1894 to 1900 as described by you?

By Mr. MILLER.—Same objection. [361]

A. With the phonautograph which I saw at the

(Deposition of Frank H. Stewart.)

lecture referred to I did not have the opportunity to examine the horn which was used. The general construction of the horn as used and this illustration on p. 157 are alike. Answering Mr. Hicks' question, the difference in the construction between the horn used on the phonautograph and the horns used by Hawthorne & Sheble was merely in the dimensions of the strips which were used. On the horns made by Hawthorne & Sheble, the strips were narrower at the small end and in this way formed a smaller opening. The opening for the diaphragm on the phonautograph being about five inches in diameter and the opening on a phonograph horn being about five-eighths of an inch in diameter.

Q. 81. How was the connection between the small end of the horn of Scott's phonautograph made with the diaphragm thereof?

By Mr. MILLER.—Same objection.

A. The horn was directly connected to the diaphragm holder. The horn was held in approximately rigid position. The diaphragm was stationary and the cylinder upon which the tracing was made moved transversely across the machine and in this manner made a spiral along the face of the tracing paper. As the cylinder which carried the tracing-paper moved, there was always a fresh coating exposed to the registering stylus.

Q. 82. In the horn of Scott's phonautograph how do the edges of the tapering strips run?

By Mr. MILLER.—Same objection.

(Deposition of Frank H. Stewart.)

A. I don't recall the manner. I do not recall the exact detail of the instrument which I saw, but in this illustration the seams run longitudinally.

By Mr. MILLER.—I move to strike out all the testimony given by this witness regarding the subject matter of Scott's phonautograph on the ground that his information was derived largely, if not entirely, from the actual instrument which he says he saw on exhibition and not from the publication alone.

Direct examination closed. [362]

The cross-examination of Mr. Stewart, is adjourned to Saturday, September 20, 1913, at 2:00 o'clock, same place.

Adjourned to Thursday, September 18, 1913, at 11 A. M., same place.

September 18, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

[Deposition of John Kaiser, for Defendant.]

JOHN KAISER, being duly sworn as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. John Kaiser; age 40; residence 101 East Tremont Avenue, New York City; occupation, phonograph expert.

Q. 2. Please state what experience you have had with reference to phonographs and similar machines.

A. In the year of 1891, I entered the employ of the

(Deposition of John Kaiser.)

New York Phonograph Company in the capacity of assistant in the recording laboratory at 257 Fifth Avenue, New York. In 1893, the New York Phonograph Company was consolidated with the North American. I was employed by that concern until they went out of business, which, I believe, was 1894. I then gave exhibitions in clubs, churches, etc., until the firm of Walcutt, Miller & Company was organized in the fall of 1894. I was employed by them, which was at that time 110 East Fourteenth Street. In 1896, I became associated with two of the members of that firm, who helped form a corporation known as the Phonograph Record and Supply Company, located in Reade St., New York City. In 1897, this concern liquidated, and I was employed by the Judge Publishing Company at 110 Fifth Ave., New York City. I had charge of their phonograph department. In 1898, I became associated with the firm known as Harms, Kaiser and Hagen, which was formed to make what was known as phonograph master records. In 1900, this company went out of business and I took over what was left of them myself and conducted it myself until 1901. I then [363] entered the employ of the Universal Talking Machine Company. In 1904, I left that concern and some time in the latter time of the same year I entered the employ of the Douglas Phonograph Company. In 1908, after the discontinuance of the Douglas Phonograph Company, I and two other associates spent my time selling what stock was left in that company. The following year I entered the employ of the U. S.

(Deposition of John Kaiser.)

Phonograph Company and took charge of their recording laboratory at 662 Sixth Ave., New York City. In the fall of last year, the laboratory was closed. Since that time and up to the present time I have been experimenting on a few new devices.

Q. 3. Please state whether the new devices on which you have been experimenting are connected with the phonograph?

A. Yes, with the phonograph art.

Q. 4. Please look at U. S. Trademark No. 31,772, registered July 5, 1898, and state whether you are the John Kaiser who registered this trademark for the "Kaiser Horn."

A. Yes, I am that John Kaiser.

Q. 5. Please look at the photograph which I show you and state what you know about the original horn from which the photograph was taken.

A. This is the Kaiser Horn made for the purpose of having a drawing made so that the application for trademark could be applied for.

Q. 6. What relation, if any, existed between the Kaiser horn shown in that photograph and the Kaiser horn shown in that trademark No. 31,772?

A. The drawing was made from this horn that this is the photograph of. To explain a little further, at the time I consulted my attorney, I thought that I could secure a patent on this horn. I took this horn to him in the unfinished shape, meaning by that that I did not have it covered or varnished on the outside as was the custom, so that I could show him the construction more readily. After a consultation on the

(Deposition of John Kaiser.)

subject, he advised me to apply for a trademark, stating that, in his opinion, the horn was not patentable [364] and he advised me then to have a drawing made of this horn so that he could forward it to Washington with the other papers.

By Mr. MILLER.—We move to strike out that portion of the answer reciting what the attorney said or advised the witness on the ground that it is hearsay.

Q. 7. When did this conversation between you and your attorney take place?

A. About a month prior to the time I applied for the trade-mark.

Q. 8. When did you apply for the trademark?

A. In April, 1898.

Q. 9. What has become of the horn from which that photograph was taken?

A. I delivered that horn to this office some time in May, 1913.

Q. 10. Where is the horn to-day, if you know?

A. I don't think I know where it is at just this moment.

By Mr. HICKS.—The Kaiser horn shown in the photograph is at present in San Francisco, Cal., having been there taken for the purposes of the motion for preliminary injunction in this suit and will be produced upon the trial of this suit. The photograph of the said Kaiser horn just shown to the witness is offered in evidence and marked "Defendant's Exhibit, Photograph of Kaiser Horn of 1898. Frank Z. Demarest, Examiner."

(Deposition of John Kaiser.)

By Mr. MILLER.—If the horn itself is put in evidence we will not object to the photograph, reserving, however, the right to determine whether this photograph is a correct photograph of the horn; otherwise we will object to it as incompetent, irrelevant and immaterial and secondary evidence.

Q. 11. At the time you verified your affidavit in this suit on June 6, 1913, did you see this photograph and the Kaiser horn from which it was obtained?

A. Yes, I did.

Q. 12. Is the photograph a correct photograph of said Kaiser horn? A. In my opinion it is.

Q. 13. Please state when and where you first made the Kaiser horn such as is shown in the photograph just offered in evidence.

A. The first phonograph Kaiser horn that I made was in the year of 1895, when I was in the employ of Walcutt, Miller & Company. I [365] gave exhibitions and evening entertainments with the phonograph in the evening, which was a business of my own, so to speak. I always felt that the phonograph record had never been reproduced correctly by the horns then in general use, so after considerable study and experimenting I created what is now known as the Kaiser horn. I gave the first public exhibition with it in the fall of 1895. The success of my exhibition led me to believe that I had succeeded in creating a horn that gave better results than anything used in the phonograph art at the time. It was in Thanksgiving week, 1895, if I am not mistaken, it was on Thanksgiving Eve, in St. George's Parish

(Deposition of John Kaiser.)

House in 16th St., which adjoins St. George's Church.

Q. 14. To what did you attribute the success of the Kaiser horn in reproducing sound from a phonograph record?

A. In my opinion, it was the first horn constructed on any principle. The construction of the horn was such that it afforded the correct space and proper means of actual completion, being built so as to flare outwardly from the beginning at the smaller end and and it was the fact that the horn constructed that way gave a reproduction that was pure, especially as to detail, bringing out the more delicate musical passages of the record and having a tendency to make the sound appear out in the horn, a term that was used at that time, commonly in the trade, which other horns did not produce.

Q. 15. What material did you construct the Kaiser horn in 1895 and thereafter, of?

A. The material was a press-board, sort of a tough paper.

Q. 16. Did you attribute any importance to the material of which you constructed the Kaiser horn?

A. I did for the following reasons. I found that in experimenting after using metal, celluloid and many other substances this press-board or paper that I employed in the construction of the horn did not have any sympathetic vibrations, which was found in metal, for [366] some of the climaxes in the record had tones which sympathized with the metal and it would cause what was known as the blast or coun-

(Deposition of John Kaiser.)

ter-vibration. The paper did not have any sympathetic vibration.

Q. 17. What connection, if any, existed between these experiments when you used metal, celluloid and other substances and the Kaiser horn made of paper?

A. I can't seem to understand what you mean.

Q. 18. When did you make these experiments using metal, celluloid and other substances?

A. All during the period that I was giving exhibitions I spent what little time I had in making up horns in order to be able to find something that would give better results than what I was using.

Q. 19. When did you begin to make the experiments. A. I began as early as the fall of 1894.

Q. 20. When did you cease to make these experiments using metal, celluloid and other substances?

A. In 1895, when I finished what is known as the Kaiser horn now.

Q. 21. Please describe the method or process which you employed in constructing the Kaiser horn made of pressed cardboard or tough paper.

A. I employed twelve longitudinal strips, which were placed upon a form and one strip lapping over the other forming a seam. I used glue as an adhesive and to strengthen the horn covered it with twelve strips. I used twelve tapered strips to cover the seams, thereby getting more solidity. I put these strips on the outside of the horn.

Q. 22. Did you use a form in experimenting in the making of a horn from metal, celluloid and other substances?

(Deposition of John Kaiser.)

A. I did in every case where it was practical.

Q. 23. In what cases did you find it practical to use a form?

A. In the celluloid, the form was used in the same manner as with the press-board, using a celluloid glue to fasten the strips at the seams. In the metal, I used the form with a strip of iron [367] running under each seam so that the ends could be soldered, meaning the strips, soldered together so as to form a seam. In the wood the experiment was made in practically a similar manner only that the strips were formed in shape by a method of using seams to allow the wood to bend to the form, and after the wood was kept on the form for a day or two I managed to use another strip of wood going over the seam, gluing that on so as to avoid the possibility of the horn falling apart. I put this strip on the outside of the horn.

Q. 24. Please describe the shape of the form which you employed when constructing the Kaiser horn made from pressed cardboard or tough paper.

A. The form was the exact shape of the inside of the Kaiser horn, meaning by that, that the Kaiser horn when fitted over the form was the same shape as the form exactly.

Q. 25. Please describe the shape of the form which you employed when making horns from celluloid in the manner described by you.

A. The form was identical.

Q. 26. Please describe the shape of the form that you used when making horns from metal in the man-

(Deposition of John Kaiser.)

ner described by you.

A. The form was identical with the exception that I used a metal strip under each of the seams so that the form itself, which was made of wood, would not meet with any injury when soldering.

Q. 27. How many seams did you employ when making horns from celluloid in the manner described?

A. There were various seams employed in experimenting. I tried as many as from four to twelve. The object was to try and cut the celluloid in as few strips as possible in order to handle the mold. I found that I had the most success with twelve strips.

Q. 28. How many seams did you employ when making horns from metal in the manner described by you? [368]

A. To the best of my recollection, I found the same results as I did with celluloid. I found that I could handle the strips more successfully when employing twelve strips.

Q. 29. Please describe in detail the seams used by you for joining together the metal strips when you made horns of metal in the manner described by you.

A. In some cases I just lapped the one strip of metal over the other and employed solder as a means of joining them together. The other experiments were made in various ways. In one particular case I had a tinsmith make the upper part of the horn, which, possibly, was about eight inches long, to which I formed the metal strips by means of a sort of a clamp seam, I would call it. But in most cases I

(Deposition of John Kaiser.)

found it practical to solder.

Q. 30. How did the tinsmith construct this piece eight inches long at the small end of the horn?

A. By means of placing a little furrow on the end and then bringing the metal around in a cone shape with a sort of a lock seam. This piece on the end had only one seam.

Q. 31. In constructing the Kaiser horn of pressed board or tough paper, what was the length or longitudinal extent of each of the strips of paper employed in constructing that horn in the manner described by you?

A. To the best of my recollection it was twenty-two inches from the small end to the large end. In some cases where I made what was known as an exhibition horn some of them were made as long as thirty-six inches. The sizes varied in this instance as I made these horns specially for different purposes. Exhibitors that required a good deal of volume to give exhibitions in public halls and churches, I made them for these exhibitors at about thirty-six inches in length.

Q. 32. Where did each paper strip commence and where did it end, referring to the parts of the horn?
[369]

A. It commenced at the small end where the ferule was inserted and went to the larger end of the horn.

Q. 33. Where did the strips of celluloid commence and where did they end?

A. The same as in the other, it commenced at the

(Deposition of John Kaiser.)

small end where the ferrule was inserted and went to the larger end.

Q. 34. And where did the strips of metal commence and where did they end when you made horns of metal in the manner described by you?

A. Some commenced at the ferrule and went to the extreme end and others commenced from a distance of about seven or eight inches from the ferrule and went to the larger end.

Q. 35. When you made horns of metal in the manner described by you, did you use any seam other than the lap seam when joining together the edges of the sections of metal?

A. My experimenting on the metal horn was not near as extensive as on the other material owing to the fact that I believed in paper; but in some of my experiments on metal I had to employ a tinsmith to bring about constructing these horns as I was not familiar enough with the metal art, so to speak. In some cases there were other methods of seaming employed, but I doubt whether I will be able to describe them to you.

Q. 36. Was there any reason why you did not manufacture horns from metal?

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial.

A. The reason I had was that I considered the paper horn much superior.

Q. 37. Superior in what respect as compared with metal?

A. I believed the paper horn gave a purer repro-

(Deposition of John Kaiser.)

duction of tone and did not give the metallic ring that was found in the metal horns. [370]

Q. 38. Please state the extent of your experience with metal horns for phonographs.

A. In my entire career in the talking-machine business I was more or less interested in the horns, and even in the early stages of 1891, when I entered the business, the matter of being able to reproduce the record to its best advantage seemed to be of great interest to me. There were various kinds of horns on the market. Some were made of brass, some of zinc, some of sheet-metal covered with Japan and another horn made of paper fiber molded, which was then known as the Bettini horn and still another made of glass, that was placed on the market by Mr. M. F. Prescott. After trying them all I found defects in them. The metal horn in all cases had what I termed the sympathetic ring wherever there was a climax in the record causing what is commonly known in the art as the blast. The glass horn had the same defect, giving an over-vibration and ever in sympathy with some climax in the record. The papier-maché horn had a muffled effect and even to the present day horns made of other material besides metal give the best results. In later years they were successful in employing wood in the construction of horns, which, in my opinion, give a very superior reproduction of sound over the metal horns. I still believe that the press-board or paper horn such as the Kaiser horn is still the best; but owing to the fact that we have never succeeded in manufacturing

(Deposition of John Kaiser.)

a paper horn that has any amount of beauty the sale of the horn would naturally not be as great, as most users of talking machines prefer to sacrifice the tone quality of their machine than to sacrifice the harmony of surroundings in their home.

Q. 39. When did you first form your opinion with respect to the comparative merits of pressed cardboard and metal in the construction of horns for phonographs? [371]

A. In about the beginning of the year of 1895. After constructing the Kaiser horns and giving the exhibition I mentioned before I made up several more of the horns to give to my friends connected with me in the art. I gave one to Walter H. Miller and one to Henry J. Hagen and the one I gave to Mr. Miller was exhibited in the presence of Mr. Edison, who, according to Mr. Miller's statement, declared the horn gave the best reproduction of sound he had ever heard. This and the success that I had in the exhibition field confirmed my belief that I had created something worth while.

Q. 40. Has your experience since 1895 led you to change that opinion? A. No, sir, it has not.

RECESS.

Q. 41. What, if anything, did you do in putting the Kaiser horn upon the market in this country?

A. I started to manufacture them for the market in about the middle of 1897. I sold them then to the Judge Publishing Company, while I was employed there. And when we formed the firm of Harms, Kaiser & Hagen I had an opportunity to feature the

(Deposition of John Kaiser.)

horn among the trade as we were selling them quite a number of original records. The sale increased steadily until about the year 1901, when a man by the name of Schoettel put a horn exactly like it on the market and called it the Mega horn. His introduction of the horn hurt my business considerably, so much so, that I finally abandoned making the horn at all in 1903, I believe.

Q. 42. I show you a photograph which has been offered in evidence as "Defendant's Exhibit, Schoettel Mega Horn or Kaiser Horn." Please state whether you saw the horn from which that photograph was taken.

A. This looks like the photograph of a horn I saw at your office here in about May, 1913.

Q. 43. Could you, from an inspection of the horn, tell whether it was one of your Kaiser horns or one of Schoettel's Mega horns? [372]

A. The horns look very much alike. It was only by one thing that was stamped on the inside of the horn that led me to believe that it was a Schoettel horn.

Q. 44. I show you a page *from* photographed from a page of the Talking Machine World. Please state whether the Mega trumpet or Mega Flower there shown was to your knowledge upon the market in this country?

A. Yes, both horns described in this photograph were on the market.

Q. 45. Do you know *for long* a period of time the Mega horns shown in this photograph were on the

(Deposition of John Kaiser.)

market respectively in this country?

A. The Mega trumpet I can remember distinctly was on the market in about 1901. The Mega Flower came later, to the best of my recollection, in about 1904 or 1905.

By Mr. HICKS.—The photograph shown the witness is offered in evidence and marked “Defendant’s Exhibit, Photograph of E. A. and A. G. Schoetel’s Advertisement of Mega Horns in the Talking Machine World, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—I object to the photograph unless the date of its publication in the Talking Machine World is given.

By Mr. HICKS.—The exhibit sets forth a special dispatch from Philadelphia, dated March 12, 1905, and the photograph is a photograph of p. 9 of the Talking Machine World for March 15, 1905.

Q. 46. You spoke of Bettini’s horn made of fiber or papier-maché. Please state when you first knew of this Bettini horn in this country.

A. In the year 1894 I saw the first Bettini horn. I was requested to give an exhibition in Brooklyn in the church that Henry Ward Beecher was connected with at one time. Mr. Bettini requested me to give the exhibition, and I remember going to his laboratory which was then in the Judge Building, New York City, so that I could get acquainted with his attachments, which was a separate feature which he sold and placed on Edison phonographs.

Q. 47. What was the shape of the Bettini papier-maché horn? [373]

(Deposition of John Kaiser.)

A. The best way that I can describe the shape is that it resembled very much one of those funnels you find on steamers, used for ventilators.

Q. 48. Was the Bettini horn anything like the ship's ventilator shown in U. S. Design Patent No. 34,907 of August 6, 1901, to McVeety & Ford?

A. It was very similar to figure 2 with the exception that the edges were round instead of octagon shape at the large end.

Q. 49. The ship's funnel shown in the McVeety & Ford Patent appears to be cut off at the smaller end. Please compare Bettini's horn with the ship's ventilator in this respect.

A. The Bettini horn was constructed all in one piece from the ferrule, which was attached to the speaker of the machine, and gradually tapered outwardly to the large end.

Q. 50. Did Bettini put on the market any other style of horn that you know of in this country?

A. Yes, later, about 1897 or 1898, when I was with the Judge Publishing Company in the same building, he constructed the horns that had an aluminum bell and the shape was pretty near the same as his former horn and was constructed so that the body between the ferrule and the aluminum bell was made of a series of strips joined together on the edges. I have quite forgotten the material used in that part of the horn. I cannot state surely whether it was metal or fiber.

Q. 51. Can you state how the different strips making up the part of the Bettini horn from the ferrule

(Deposition of John Kaiser.)

to the aluminum bell was secured together?

A. To the best of my knowledge they had a clamp seam.

Q. 52. What do you mean by a "clamp seam?"

A. I mean a strip that runs between the sides of each strip, where they run adjacent to each other and it seemed as if this strip was forced together by some clamping; that is as best I can describe it.

Q. 53. Did this clamping strip contain two U-shaped pockets?

By Mr. MILLER.—Question objected to as leading. [374]

A. Well, I would describe the strip as having a groove on each side in which the strips of the horn were inserted.

Q. 54. If, then, you looked at this clamping strip from one of its ends, what would the shape of the end appear to be?

A. I suppose you would call that a U-shape.

Q. 55. Would a U-shape represent both grooves you mentioned? A. Yes, it would.

Q. 54. Please look at Fig. 3 of U. S. Patent No. 534,543, of Feb. 19, 1895, to Berliner, and state whether the horn shown in that figure was ever on the market in this country, to your knowledge or in use therein.

A. Yes, I remember seeing quite a number of these horns on machines such as shown in the sketch.

Q. 55. Please describe the material of which horns like that shown in the sketch were composed.

A. The material resembled hard rubber and the

(Deposition of John Kaiser.)

dis-record-that-was-on-the market composition was practically the same as that the record was composed of.

Q. 56. Do you know of any horn for phonographs constructed of wood, that have been on the market in this country?

A. Yes, I know of quite a few. The wood horn made and sold by the S. B. Davega Company in which a namesake of mine, Lippman Kaiser, was interested, was built on the same lines as the Kaiser horn. This horn I saw in about the year 1904 and in 1907 the Jordan Furniture Company at Brooklyn manufactured a horn which was later sold exclusively to a phonograph supply company in Warren St. It was known as the Eureka horn and about the same time the Victor Company built a horn or had it built for them over the lines of the Kaiser horn and about a year later the Music Master horn appeared on the market. These horns were all about the same shape, similar to the Kaiser horn. All of these horns mentioned were made of wood. [375]

Q 56. Do you know whether The American Graphophone Company or its selling agent, the Columbia Phonograph Company, has put on the market in this country any horns made of wood?

A. Yes, I remember that the Columbia Phonograph Company put a horn on the market made of wood. It was manufactured by a former salesman of theirs, Thomas Murray. It was made somewhere in the State of New York, but I cannot recall the time. This horn was identical in shape with the

(Deposition of John Kaiser.)

other horns mentioned and the Kaiser horn.

Q. 57. How about the National Phonograph Company or Thomas A. Edison, Inc., with respect to horns made of wood?

A. I can remember that they equipped their outfits, especially the better type of machine, or most expensive type, with the wooden horns, similar to the ones described.

Q. 58. How were these wooden horns which you have mentioned constructed?

A. The Eureka horn was constructed of a number of longitudinal strips joined together by a strip that run from the small end of the horn to the large, which had a U-groove on each side. The strip appeared on the outside of the horn as well as the inside. The wooden horn that the Victor and Columbia Company and Edison Company were equipping their machines with were also made of longitudinal strips which were brought together and glued.

Q. 59. Were the wooden horns mentioned by you constructed in any other way than by joining together the number of longitudinal strips of wood.

A. Not to my knowledge.

Q. 60. I show you a photograph and ask you to state what you know of the horn shown in that photograph.

A. This is the photograph of the Eureka horn in marquetry finish, that I had in my possession since the time I purchased it, about 1907, from the supply company in Warren St. [376]

Q. 61. What has become of the original horn from

(Deposition of John Kaiser.)

which this photograph was taken?

A. I delivered it to this office some time in May, 1913.

By Mr. HICKS.—The horn from which the photograph just shown to the witness was taken, having been taken to San Francisco and left there for the purposes of this suit, the photograph is offered in evidence and marked “Defendant’s Exhibit, Eureka Marquetry Finish Horn of 1907, Frank Z. Demarest, Examiner.” The original horn will be offered in evidence at the trial.

Q. 62. I show you two pages of the Talking Machine World, Nos. 38 and 39, and ask you to look at them and state what you know about the horn shown in the two cuts on p. 38.

A. The two cuts that appear on p. 38 are cuts of the horns sold by the General Phonograph Supply Company and manufactured by the Jordan Furniture Company of Brooklyn and are similar to the Eureka horn that I described.

By Mr. HICKS.—The pages referred to are offered in evidence and are marked “Defendant’s Exhibit, Advertisement of the Eureka Wooden Horn, in the Talking Machine World for December 15, 1907, Frank Z. Demarest, Examiner.”

Q. 63. Please state what you know about the use of the lock seam or tinsmith’s seam such as is shown in defendant’s exhibit, two-strip metal horn, which has a figure 4 painted thereon, in the construction of horns for phonographs in this country.

(Deposition of John Kaiser.)

A. Mostly all of the metal horns that were in use from the time I entered the talking-machine field had a seam such as this.

Q. 64. Do you know of any other seam that has been employed for joining together the edges of sheet metal used in the construction of horns for phonographs?

A. There were some horns with a wire seam that was soldered to the metal.

Q. 65. What horns were those?

A. Why, in the early days, say, about 1895 or 1896, the Tea Tray Company, I believe, a concern in Newark, manufactured what was known [377] as the fifty-six inch exhibiting horn. There were a few other manufacturers that I cannot recall at this time that employed this seam and a good many recording horns that were made up for the laboratory use were constructed this way.

Q. 66. Was the wire used in this seam on the inside or the outside of the horn?

A. On the outside of the horn.

Q. 67. In what direction did the wire run?

A. It ran from the small end of the horn straight out to the outer or larger end of the horn.

Q. 68. How many such wire seams were employed in the construction of these wire-seamed horns in 1896?

A. They varied in number of seams. Some had only one. Others had two and in some of the recording horns, especially, there was as many as eight seams.

(Deposition of John Kaiser.)

Q. 69. Where more than one of these wire seams were employed, of how many sections of the sheet metal did the horn consist?

A. In some of the recording horns which were octagon shape there were eight pieces of metal. Others that were made square had four pieces of metal. And where two seams were employed there were two pieces of metal.

Q. 70. What was the shape of these horns for the phonograph, constructed of two or more sections of metal joined together at their edges by these wire seams?

A. The shapes varied considerably. There were some that were shaped like defendant's exhibit, two-strip metal horn having the figure 4 painted thereon. Others that were cone-shaped to about fifteen inches from the ferrule and then had a flare attached accentuating the flare that this horn contains. Then, in the recording horn there were pyramid shapes and octagon shapes and then there was a collapsible horn that was built for the convenience of traveling exhibitors. These collapsible horns were built in sections, [378] cone shape, and each section was flaring so that when the horn was pulled together it resembled defendant's exhibit, two-strip metal horn having the figure 4 painted thereon, only considerably larger and the last section, being the section at the large end of the horn, was bell shaped.

Q. 71. Were any other horns for phonographs constructed in this country to your knowledge by use of the wire seam after 1896 and before the close of

(Deposition of John Kaiser.)

the year 1904; and, if so, describe the same giving the shapes thereof.

A. In 1903 came upon the market what was commonly known as the Flower horn, a horn constructed of longitudinal strips of metal with this wire seam, forming a series of petals on the outer or larger end of the horn. This horn resembling a flower was named the Flower Horn. There were quite a number of them, the majority were shaded and painted on the inside to give them a distinct flower effect. This horn became very popular with the trade, so much so, that a number of cornice makers became interested in the manufacture of the same and the various jobbers were competing with one another to get the dealers' trade through the attractive offers they could make on this horn. The standard manufacturers at the time, known in the trade, such as the Tea Tray Company, Hawthorne & Sheble, The Standard Metal Company, all became interested in manufacturing the horn under similar lines.

Q. 72. Have you ever known of a horn for a phonograph being upon the market in this country, made up of several strips of metal joined together at their edges by any butt seam, that is to say, a seam formed by turning over the edges of the strips of metal at right angles, then placing the outwardly extended flanges so formed and soldering the same together?

A. I believe there were quite a number of the Flower horns made with that seam.

Q. 73. Are any horns having such a butt seam on the market in the United States to-day, to your knowledge? [379]

(Deposition of John Kaiser.)

A. Yes, there are quite a number.

Q. 74. Who makes them?

A. I believe that the majority of the horn manufacturers employ that seam to-day.

Q. 75. Have you ever seen a horn put out by the Edison Company having that seam?

A. It is five years since I have been interested in the jobbing end and I cannot state positively whether the horns put out with the Edison outfits had that seam. I do know, however, that we sold considerable horns with that seam when we were in the jobbing business.

Q. 76. Please describe, in your own words, what you understand to be the "butt seam."

A. The way I would describe that is that the metal being joined together at its edges by the means of one edge locking into the other and then soldered together.

Q. 77. Please compare your definition of the butt seam with the seam shown in defendant's exhibit, two-strip metal horn having the figure 4 painted thereon.

A. This seam here on the exhibit mentioned locks the one piece of metal into the other by means of turning over the edges of both pieces of metal; and the butt seam turns over one edge.

Q. 78. In your answer to Q. 76 you described the "butt seam," saying that "the metal being joined together at its edges by the means of one edge locking into the other and then soldered together." I do not understand what you have had in mind as the

(Deposition of John Kaiser.)

butt seam. Please explain how in your definition of the butt seam one edge of the metal locks into the other.

A. I think that in explaining the butt seam I should have stated that one end of the metal laps over the other.

Q. 79. Please illustrate in what manner one end of the metal laps over the end of the adjacent sheet of metal to form the butt seam [380] that you have in mind.

A. I may be able to describe what I mean with a piece of paper. (Paper handed witness.)

Q. 80. In answer to the last question you have taken a piece of paper and divided the paper into two parts. You have also turned over the edge of one part so that the turned-over part lies flat with the other part of the paper of which you turned over the edge. And you have done the same with the other section of the piece of paper and then you have locked the two turned-over edges together by inserting the two turned-over edges into the two grooves formed by turning over the edges. Is that correct?

A. Yes, that is correct.

Q. 81. I have glued together the interlocking turned-over edges of the two sections of the piece of paper as they were interlocked and placed by you. Please look at the seam thus formed and state whether it now is as it was when you made the seam.

A. It is.

By Mr. HICKS.—Defendant offers in evidence the paper forming the seam referred to and marked

(Deposition of John Kaiser.)

“Defendant’s Exhibit, John Kaiser’s Illustration of What He Understood the Butt Seam to be, Frank Z. Demarest, Examiner.”

Q 82. Please state whether any different effect is produced in a horn for phonographs by employing one seam or more than one seam in the construction of the horn, with respect to the reproduction of sound from a phonograph record.

A. In my opinion, the seam makes absolutely no difference in the reproduction. I believe, however, that a horn will be more durable if constructed with more seams.

Q. 83. Please state the tendency at the present day with respect to the use of the horns for phonographs. By this I mean, what is being done with regard to horns in the manufacture and use of phonographs.

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial.

A. At the present day the demand of the public is what is known as [381] the hornless machine. To my knowledge a machine equipped with a horn to-day similar to the outfits sold four or five years ago is absolutely unsalable.

Direct examination closed.

Cross-examination by Mr. MILLER.

XQ. 84. Referring to Bettini’s papier-maché horn and Bettini’s horn with an aluminum bell and Schoettel’s Mega horns and the Eureka horn, all testified to by you, I ask you if those horns are on the market to-day.

A. Why, to my knowledge I don’t think they are.

(Deposition of John Kaiser.)

There may be some dealers who may have been carrying them for years and are still offering them for sale. But the general demand for horns has dropped off entirely.

XQ. 85. Do you think that the modern hornless machines are any improvement over the horn machines so far as reproducing of records is concerned?

A. I do not think there is any improvement. In my opinion the old method of reproducing sound is superior to the present-day hornless machine.

Cross-examination closed.

Deposition closed.

New York, Sept. 20, 1913.

Met pursuant to adjournment at 2 P. M.

Present: LOUIS HICKS, Counsel for Defendant.

No appearance for Plaintiff.

**[Deposition of Frank H. Stewart, for Defendant
(Cross-examination).]**

FRANK H. STEWART resumes the stand for cross-examination by Mr. Miller.

By Mr. HICKS.—At 1:45 P. M. I received by messenger a note from plaintiff's counsel, Mr. Miller, stating that it would be impossible for him to proceed with the cross-examination of Mr. Stewart this afternoon and requesting a continuance until Monday, September 22. This note was received too late to enable me to notify Mr. Stewart, who has come from Philadelphia to New York for his cross-examination, principally for the convenience of plaintiff's counsel. In view of [382] the fact that plaintiff's counsel was not willing to proceed with the cross-examina-

(Deposition of Frank H. Stewart.)

tion of Mr. Stewart at the close of his direct examination at 4 P. M. on September 17, and since Mr. Stewart has come on twice from Philadelphia to give his deposition, defendant's counsel requests plaintiff's counsel to proceed with the cross-examination of Mr. Stewart on September 24, 1913, at 11:00 o'clock in the forenoon in the office of Horace Pettit, Esquire, room No. 705 Witherspoon Building, Walnut below Broad St., Philadelphia, Pa., Mr. Stewart having stated that he will arrange to be present at that time and place.

Adjourned to Monday, September 22, 1913, at 11:00 A. M., at 233 Broadway, New York City, for the examination of Camillus A. Senne, who has been subpoenaed by defendant to appear at that time and place.

New York, Sept. 22, 1913.

Met pursuant to adjournment.

Present: JOHN J. MILLER, Esq., Counsel for Plaintiff.

LOUIS HICKS, Counsel for Defendant.

[Deposition of Camillus A. Senne, for Defendant.]

CAMILLUS A. SENNE, being duly sworn as a witness on behalf the defendant, testifies as follows:

Direct Examination by Mr. HICKS.

A1. Please state your name, age, residence and occupation.

A. Camillus A. Senne, 39, 857 Whitlock Avenue, Bronx, New York, manufacturer of gummed tape and sealing machine.

Q. 2. Please state what experience you have had in

(Deposition of Camillus A. Senne.)

the manufacture of horns for phonographs.

A. I began the manufacture of horns for phonographs in the early part of 1904. I then manufactured a horn made out of metal strips fastened together at their abutting edges by means of solder. A horn of this nature had the morning-glory effect when completed. Another was the strips were tapering and by holding them together with solder and formed a bell-shaped construction. During the year 1904 I was advised by a Mr. Nielsen that the horn I was manufacturing was an infringement on a horn for which he had made an application for letters patent. Of course, I paid no attention to his claims, [383] but some time later in the year he showed me the final papers where he had secured a patent on his horn that was similar to mine. I then stopped making such metal horns and made horns out of paper or cardboard, the strips being identically the same as those made out of metal, but their edges were fastened together by a strip of metal box stay material. I manufactured that horn until the later part of 1907. A suit in equity was brought against me and my partner, Peter E. Petersen, in the early part of 1905. This suit was brought by the United States Horn Company of Brooklyn, N. Y. Not having any funds to defend the action the case went by default of court. An injunction was handed down some time in the year of 1905. In the meantime I had applied for an application for letters patent on a horn made out of paper strips or metal, a collapsible horn, the construction of which was the

(Deposition of Camillus A. Senne.)

same as the other two horns manufactured by me. I was asked by Mr. Stickney, counsel for the complainant, to call on him at his office in Nassau Street, New York City. He had drawn up a contract which he wanted me to sign, and without reading the contract over very carefully I signed my name to the same, but not at his office, but at my home. But after looking over the said contract very carefully I concluded not to go into the deal, and I did not deliver the contract, but have it still in my possession.

Q. 3. Please look at U. S. Letters Patent No. 811,877, patented Feb. 6, 1906, upon an application filed November 1, 1904, to Camillus A. Senne for a phonograph horn and state whether you are the Camillus A. Senne to whom that patent was granted.

A. I am the Camillus A. Senne, inventor of said horn.

Q. 4. Did you file your application for said patent on November 1, 1904? A. I did.

Q. 5. In your answer to Q. 2 you stated that you had applied for letters patent for a collapsible horn. What letters patent did you refer to?

A. I refer to 811,877 of February 6, 1906. [384]

Q. 6. Also in your answer to Q. 2 you stated that the construction of the collapsible horn of that patent was the same as the construction of the metal and paper horns, which you referred to in your answer to

Q. 2. Were those metal and paper horns also collapsible?

A. No, they were not. In answering said question

(Deposition of Camillus A. Senne.)

I meant that the strips used in making the collapsible horn were of the exact same shape as those used in making the other two horns; but, of course, in the collapsible horn, I provided means for disengaging said strips. Otherwise the horn was the same.

Q. 7. In your answer to Q. 2 you stated that in the early part of 1904 you manufactured a horn made out of metal strips fastened together at their abutting edges by means of solder. Please state how the abutting edges were put together so that they could be fastened by means of solder.

A. The extreme edges of those strips were slightly turned outwardly forming a flange running from one end or from the larger end of the strips to the narrow end and those flanges were then soldered together.

Q. 8. In your answer to Q. 2 you stated that you stopped making such metal horns and made horns out of paper or cardboard, the strips being identically the same as those made out of metal but their edges being fastened together by a strip of metal box-stay material. Did you file any papers in the United States Patent Office with reference to this horn?

A. On November 18, 1904, I filed a caveat on this particular horn in the U. S. Patent Office.

Q. 9. When did you begin manufacturing the paper horns upon which you filed the caveat?

A. In the early part of September, 1904.

Q. 10. In answer to Q. 2 you stated that Mr. Stickney drew up a contract which he wanted you to sign. How did you receive the contract from Mr. Stickney?

[385]

(Deposition of Camillus A. Senne.)

A. I think Mr. Krabbe advised me in person to call on Mr. Stickney. In calling at his office he told me that some arrangement could be made whereby we could make the metal horn as made by us in the past and he drew up a contract which I believe he handed to me at his office.

Q. 11. I show you a certified copy of an affidavit verified by Burnham C. Stickney on November 9, 1905, in the suit of the United States Horn Co. v. Peter E. Petersen and Camillus A. Senne, then pending in the United States Circuit Court for the Southern District of New York and call your attention to this statement by Mr. Stickney therein:

“A day or two after said interview with Senne, he again called at my office, and talked with me as to the terms of the contract and royalty, and on the same day I prepared such contract, and mailed it to Senne.”

Do you recollect that occurrence?

By Mr. MILLER.—Question objected to as leading, also as in the nature of a cross-examination, also as incompetent, irrelevant and immaterial.

A. I believe that is right.

By Mr. HICKS.—The affidavit referred to is offered in evidence and marked “Defendant’s Exhibit, Stickney Affidavit, November 9, 1905, Attorney for Plaintiff in Suit of U. S. Horn Co. v. Petersen and Senne, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial.

By Mr. HICKS.—The purpose for which this affi-

(Deposition of Camillus A. Senne.)

davit is offered in evidence is to show the position taken by the United States Horn Company with reference to the Nielsen Patent involved in this suit and in the suit brought by the United States Horn Company.

Q. 12. How many proposed contracts did you receive from Mr. Stickney?

A. I believe I only received that one.

Q. 13. Will you please produce the contract which you received from Mr. Stickney? [386]

A. This is the contract I received from Mr. Stickney.

By Mr. HICKS.—The paper produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Contract Proposed by the United States Horn Co. to Camillus A. Senne, in 1905, Frank Z. Demarest, Examiner.”

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial.

Q. 14. Please refer to the paragraph marked “First” of the proposed contract and to the paragraph marked “Sixth” thereof, and state what was the horn marked exhibit “A” therein referred to.

By Mr. MILLER.—Same objection and as calling for secondary evidence.

A. I believe it’s the metal horn or the first horn manufactured on which I was to pay a royalty of three cents (3¢) per horn.

Q. 15. Under paragraph sixth, exhibit “A” is referred to as “being a copy of the drawing accompany-

(Deposition of Camillus A. Senne.)

ing the said caveat." Did the caveat describe a metal horn?

By Mr. MILLER.—Question objected to as incompetent, irrelevant and immaterial, as calling for secondary evidence, also as leading.

A. No, the caveat described our paper horn.

Q. 16. What led you to say that exhibit "A" referred to in paragraph marked "first" and "sixth" referred to a metal horn, if the caveat described only a paper horn?

By Mr. MILLER.—Same objection.

A. Because the infringement I think was brought on account of the metal horn and on this horn I was to pay a royalty. At the same time I was asked in the contract to transfer my right on this particular caveat or the horn covered by this caveat. If the decision was handed down to cover all horns made by me and particularly the one covered by the caveat I can see no reason why they asked me in the contract to transfer my right covered by the caveat.

Q. 17. Did Mr. Stickney send to you any horn marked exhibit "A," together with the proposed contract?

A. I do not believe that he did. No, this contract just shown is [387] the only instrument received by me. If there was an exhibit it certainly would be attached to this contract.

Q. 18. Before the United States Horn Co. brought the suit on the Nielsen Patent against you and Petersen, what horns had you manufactured?

A. If you will give me the date of this suit I can

(Deposition of Camillus A. Senne.)

then answer the question more directly.

Q. 19. Please assume that the bill of complaint in the suit was filed in the United States District Court for the Southern District of New York on May 1, 1905.

A. I manufactured three different types of horns before this suit was brought, a rigid metal horn, a rigid paper horn and a collapsible horn.

Q. 20. Was any one of the three horns mentioned in the last answer covered by the caveat?

By Mr. MILLER.—Objected to as incompetent and as calling for a question of law and also as secondary evidence.

A. Yes, the paper horn referred to in my answer was covered by the caveat.

Q. 21. Was any one of the three horns mentioned by you covered by the patent No. 811,877?

By Mr. MILLER.—Same objection.

A. Yes, the collapsible metal horn was covered by my application for the patent No. 811,877.

Q. 22. I show you a photograph and ask you to state what it is.

A. This is the photograph, a true copy, of the horn manufactured by me and covered by the caveat, referred to.

Q. 23. Please describe the construction of the horn shown in the photograph.

A. This horn consisted of a number of longitudinal strips made out [388] of cardboard. Their abutting edges were not turned up forming a flange as was the case in the metal horn, but the flat abutting edges

(Deposition of Camillus A. Senne.)

were secured together by strips of metal stay material. The stay material is a strip of steel which has, on both sides over its entire length, a row of punched holes forming prongs on the inner side of the strip and these prongs were driven into the cardboard of the leaves and thereby held together, which formed a rib or ribs running over the entire length of the horn and up to the inner end to which a metal nozzle was attached, making the horn complete.

Q. 24. Please describe the edges of the cardboard strips composing the horn, with respect to the large end of the horn.

A. The large end of the horn or the bell edges of the cardboard leaves were also reinforced by a metal strip, the same kind as used in making the ribs of said horn.

Q. 25. Have you, in your possession, the horn from which this photograph was taken?

A. No, I have not at the present time, but I know that I can find several of these horns and this particular horn from which this photograph was taken I have turned over to Mr. Hicks.

Q. 26. Did you deliver the horn from which this photograph was taken to me at the time you verified your affidavit in this suit, June 5, 1913?

A. I did not deliver this horn to Mr. Hicks in person, but to a gentleman by the name of Mr. McCoy, at my office, about that time stated.

Q. 27. Does the photograph show the condition of the horn at the time you delivered it to Mr. McCoy?

A. Yes, this photograph is an exact reproduction

(Deposition of Camillus A. Senne.)

showing the horn in the same condition as it was when handed to Mr. McCoy.

Q. 28. Can you state when the particular horn from which this photograph was taken was made by you?
[389]

A. Yes, this particular horn was made by me and was one of a lot manufactured by me in the early part of 1905.

By Mr. HICKS.—The horn from which the photograph was taken having been sent to San Francisco for the purposes of this suit, the photograph is offered in evidence and marked “Defendant’s Exhibit, Photograph of Senne’s Paper Horn with Metal Strips of 1904, Frank Z. Demarest, Examiner.”

Q. 29. Please point out any differences between the horn of paper with metal strips, shown in the photograph, and the horn of your caveat, as described in paragraph sixth of the agreement proposed to you by the United States Horn Company.

By Mr. MILLER.—Objected to as incompetent and as calling for secondary evidence.

A. There is absolutely no difference between the horn shown in this photograph and the horn mentioned as covered by caveat in the proposed contract.

RECESS.

Q. 30. I show you another photograph and ask you to state what it is.

A. This photograph represents a horn the same as covered by caveat with the exception that gummed paper is used for holding the cardboard strips together instead of metal strips as used on the horn

(Deposition of Camillus A. Senne.)

described in the caveat.

Q. 31. How did you come to employ gummed tape or paper to join together the strips making up the horn, instead of the metal strips shown in the other photograph?

A. I found that gummed paper was by far a cheaper material to use and it answered the same purpose as the metal strip, which was in cost about ten times as much as the gummed paper.

Q. 32. What has become of the horn from which this photograph was taken?

A. The horn from which this photograph was taken I turned over to Mr. McCoy at the same time the other horn was turned over.

Q. 33. Is the photograph a correct photograph of the horn in the condition it was at the time you turned it over to Mr. McCoy? [390]

A. Yes, the photograph shows the exact condition the horn was in at the time of delivery to Mr. McCoy.

Q. 34. When did you begin making horns of paper strips the edges of which were secured together by gummed paper?

A. I believe it was in the latter part of 1906.

By Mr. HICKS.—The horn from which the photograph was taken having been taken to San Francisco for the purposes of this suit, the photograph is offered in evidence and marked “Defendant’s Exhibit, Photograph of Senne’s Paper Horn with Gummed Paper Strips, Frank Z. Demarest, Examiner.”

Q. 35. About how many of the original metal horns

(Deposition of Camillus A. Senne.)

composed of metal strips having their edges soldered did you make?

A. I made about 2,000 horns.

Q. 36. About how many of the paper horns with metal strips did you make?

A. I made about fifteen to sixteen thousand of the paper horns. This includes both styles of paper horns.

Q. 37. Please describe how you made the metal horns, of which you made about two thousand.

A. The nine or ten metal strips of which the horn is composed were held over a form of plaster of paris and secured thereon by a number of rings which fitted over those metal strips at different points and held those strips to the plaster of paris form. I then held the flanges of the metal strips together with a pair of plyers and the solder was then applied to the two meeting edges of the metal strips. After the solder was applied to the entire length of the flanges, which formed then a rib in the unfinished state, and this rib was filed down and then the horn was examined, as in filing down these ribs the file would work through the solder a good many places and showed several holes by looking through the horn from the inside and these holes had to be filled up again with solder.

Q. 38. Why did you construct these two thousand horns in the manner [391] described by you referring to the method by which you secured together the edges of the tapering strips?

A. Because I had no means to buy machinery for making a lock seam, which is a far easier way than

(Deposition of Camillus A. Senne.)

securing the edges together in the way we went about.

Q. 39. In your experience in the manufacture of these two thousand horns of metal in the manner described by you, what conclusion did you come to as to this method of manufacture?

By Mr. MILLER.—Objected to as incompetent and as not calling for the facts.

A. I found it was very difficult to make the horn in the manner described and would take from half an hour to an hour to complete one horn, while I could make about ten of the other horns in the same time.

Q. 40. Please compare the cost of making one of these metal horns in the manner described by you with the cost of making one of the paper horns which you made, as testified by you.

A. The cost of material for both of these horns was about alike, but the labor in making the metal horns was about ten times as much as in making the paper horns. For instance, I was able to make about ten horns a day of metal, while I produced from ninety to a hundred horns made out of paper per day.

Q. 41. At what price was it necessary to sell the metal horns in view of the expense of manufacture?

A. I had to sell the metal horn at two dollars wholesale in order to make a fair profit, while I could afford and did sell the paper horn as low as seventy-five cents, which netted me a profit as large as made on the metal horn.

Q. 42. Before you began the making of these metal horns in the manner described by you had you ever seen Peter C. Nielsen or a horn made by him?

(Deposition of Camillus A. Senne.)

A. I had never seen a Nielsen horn before that time. Neither did I see Mr. Nielsen. [392]

Q. 43. Is there any means by which you can fix the date at which you first began to make these metal horns in the manner described by you?

A. I could not state the exact date as my partner was first in making those metal horns. I believe, by looking up the records of the Consolidated Gas Company, we would be able to find out the exact date when application was filed for installation of gas in the loft in which the horns were manufactured, which was located at 401 West 124th St., New York City.

Q. 44. From whom was the loft rented?

A. The loft was rented from a party by the name of Noel, who was then the lessee of said building.

Q. 45. Do you know what has become of Mr. Noel?

A. Yes, I believe this party is now doing business under the firm name, Noel Realty and Construction Company at Riverside Drive and 137th Street. I have just *look* in the New York Telephone Directory and find this party listed under said name and knew however, beforehand, that said Noel embarked in the building business.

Q. 46. Have you any lease, letters or other papers in your own possession, which would enable you to fix the date when you and Mr. Petersen occupied said loft?

A. No, I have not. All papers and documents were destroyed in a fire during the year 1908.

Q. 47. Referring to the contract submitted to you by the United States Horn Co. in 1905 and to para-

(Deposition of Camillus A. Senne.)

graph marked "Fifth" thereof, please state whether the application, Serial No. 231,003, there referred to, was the application for your patent No. 811,877 and whether the filing date given in the contract is the correct filing date.

A. I believe that this description covers my horn as per letters patent 811,877, but the contract has the wrong filing date although the application number is correct. [393]

Q. 48. What claim, if any, was made by the United States Horn Company through its officers or agents after the granting of the injunction by default in the suit brought by that company against you and Mr. Petersen, with respect to any horn being manufactured by you?

By Mr. MILLER.—Objected to as incompetent, irrelevant and immaterial.

A. A certain Mr. Krabbe, a member of the firm, United States Horn Company, came to my house in the latter part of 1905, and before me and Mr. Petersen he stated that he was not in business to make horns but simply trying to get a royalty from all the people that were making horns. He then invited me to come over to Brooklyn and he would show me that he was correct in his statement, as he stated he had about six hundred horns in his possession all finished with the exception of painting or decorating and they were not going to put them on the market.

Q. 49. Did you go to Brooklyn and see these six hundred horns?

By Mr. MILLER.—Same objection.

(Deposition of Camillus A. Senne.)

A. I did go to Brooklyn and saw Mr. Krabbe at his store and he then took me down to his shop, which was somewhere on Broadway in Brooklyn, and showed me several large stacks of horns, which were rusting to pieces.

Q. 50. Did Mr. Krabbe make you any proposition or offer with regard to your horn business?

By Mr. MILLER.—Same objection.

A. He offered to buy out my horn plant together with the phonograph store, which I kept at that time, for the sum of five hundred dollars (\$500).

Q. 51. What reply did you make?

By Mr. MILLER.—Same objection.

A. I refused to accept his offer.

Q. 52. Please state whether Mr. Krabbe made any claim to you with [394] respect to a violation of an injunction issued against you in the suit brought by the United States Horn Company.

By Mr. MILLER.—Same objection.

A. Yes, some time before my visit to Brooklyn, Mr. Krabbe sent a woman into my store to buy several records and a phonograph horn and in making the purchase, I handed her a horn made out of paper, but fastened together a little different from any of the other horns. I am not quite sure that this horn was made out of one piece or fastened together with ribs on the inside of the horn; but I know it was one of the two different types mentioned. Shortly after this purchase was made, Mr. Krabbe entered my store and told me that I had sold a horn just a while ago and that he had two detectives outside and would

(Deposition of Camillus A. Senne.)

have me arrested for contempt of court.

Q. 53. How long after the woman purchased the phonograph records and horn did Mr. Krabbe enter your store?

By Mr. MILLER.—Same objection.

A. About two or three minutes after.

Q. 54. What, if anything, do you know about the Kaiser horn?

A. Yes, I was the owner of a phonograph and a horn about two years before I started in the manufacturing of horns; and this particular horn used on a phonograph in my home was a paper horn made or built of a number of cardboard strips which were larger on one end and smaller on the other end. These pieces were glued together, but not being familiar with horns, I did not know by whom it was manufactured and did not even know the name it was sold by. But in traveling around selling my own horn, I came across a horn exactly like the one used with my machine, in a store in New York, and this horn was employed by me for use for playing phonograph records to and selling records to customers, and then I found out from the owner of the store that this was the Kaiser horn and that he preferred [395] a paper horn over any metal horn for playing phonograph records.

By Mr. MILLER.—I move to strike out all that portion of the answer beginning with the words "And then I found out from the owner," etc. to the end, on the ground that the same is hearsay.

(Deposition of Camillus A. Senne.)

Q. 55. Did you see the Kaiser horn on the market elsewhere?

A. Yes, I saw that horn in several places and in one particular place on Chambers Street, the Douglas Phonograph Company who sold almost nothing else but Kaiser horns. Of course, these horns were sold under another name, the Mega horn.

Q. 56. What differences existed between the Kaiser horn which you owned and the metal and paper horns which you manufactured, so far as the shape of the horns is concerned?

A. There is a little difference in the shape of the Kaiser horn and the horns I manufactured. The metal and paper horns were a trifle more flaring than the paper horns manufactured by a certain party named Kaiser. But in regard to construction otherwise, the Kaiser horn was a stronger and better made horn and a better sounding horn.

Q. 57. From your experience in the manufacture or use of horns for phonographs, what did you find to be the relative merits of the different materials used in making horns, with respect, especially, to the reproduction of sound from a phonograph record?

By Mr. MILLER.—Objected to as incompetent, irrelevant, and immaterial and calling for an opinion on a subject concerning which the witness is not qualified on the ground that no sufficient foundation is laid.

A. I found in comparing a metal horn and a paper horn in playing phonograph records that the paper horn was far superior over the metal horn as it produced a clearer sound, doing away entirely with the

(Deposition of Camillus A. Senne.)

rattling as found when playing through a horn made out of metal.

Q. 58. Did you compare the metal horns manufactured by you with the paper horns manufactured by you and with the Kaiser horn owned by you, in this respect? [396]

A. I compared my horns both of metal and paper, also the Kaiser horn and several other horns, those manufactured by the National Phonograph Company, and I had also a number of dealers comparing my paper horn against the metal horn and the horn manufactured by Kaiser and they all declared that the paper horn was the best in regard to sounding quality.

By Mr. MILLER.—I move to strike out the latter portion of the answer.

Q. 59. Aside from what you learned from the manufacture of horns for phonographs, did you study or observe the acoustic qualities of such horns?

A. Yes, being to my interest in producing a better horn, I constantly experimented with all different makes; and I found that the paper horn gave a clearer and more distinct sound than any metal horn.

Q. 60. Please state the effect in a metal horn for phonographs of the longitudinal ribs formed by joining together the edges of the tapering strips composing the horn?

By Mr. MILLER.—Same objection as before.

A. In joining together the longitudinal edges to tend to stiffen the horn, it is absolutely necessary to

(Deposition of Camillus A. Senne.)

have some kind of a joint to hold the horn in a rigid position.

Q. 61. Have the longitudinal ribs formed by joining together the edges of the tapering strips any other effect in a horn for phonographs, other than the mechanical effect described by you?

By Mr. MILLER.—Same objection as before.

A. No, they have not.

Q. 62. How did you come to use the metal strips to join together the edges of the tapering sections of paper in horn for phonographs made by you?

A. In the experimenting, making a cheaper horn and making it out of paper, I used glue and paper to hold the edges of the tapering [397] strips together, but I found that the same did not work well owing to the slow setting of the glue; and while looking round for some other method, I came across a phonograph box, a box which the records are held in and stored on shelves in phonograph stores. This box was fastened together on the corners with metal-staying material; and I looked up the manufacturer of this material and procured a quantity of the same and I found it worked out to great advantage over anything used before; and I continued using the same staying material until I discarded same in favor of gummed paper, that is, paper previously gummed and put up in rolls.

Q. 63. Aside from the metal horns manufactured by you, did you ever see any considerable number of metal horns made of tapering strips, having their edges turned up so as to form flanges, which were

(Deposition of Camillus A. Senne.)

soldered together, upon the market?

A. No, the horns made by us and the horns made by Nielsen were the only two horns that were so constructed. All the horns were fastened together by lock seams.

Q. 64. Aside from the six hundred horns which Mr. Krabbe showed you in Brooklyn, as testified by you, did you see any number of Nielsen horns of the construction mentioned in the previous question?

A. Yes, I saw a few here and there. And about the only store that sold them in any large quantities was the Bettini Phonograph Company.

Q. 65. For how long a time did you continue to see any of these Nielsen horns?

A. About the time I put out my paper horns all the rest of the manufacturers of horns were manufacturing horns of metal, but they were lock-seamed and the manufacturers were enabled, owing to the easy construction, to sell them very low and right after that the Nielsen horn and the horn constructed and put together the way Nielsen did disappeared from the market.

Q. 66. And did you see any Nielsen horns on the market after Mr. [398] Krabbe exhibited to you the six hundred rusty horns in Brooklyn?

A. Yes, I saw a number of horns that were bought by stores previous to my visit to Brooklyn, but the demand by the trade was for paper horns and horns manufactured with the lock seam, owing to the cheapness.

Q. 67. Please state whether your visit to Brooklyn

(Deposition of Camillus A. Senne.) .

to see the six hundred rusty Nielsen horns took place before or after the time that Mr. Stickney mailed to you the contract proposed by the United States Horn Co. ?

By Mr. MILLER.—Question objected to as leading and suggestive and not the proper way to elicit facts.

A. My visit to Brooklyn happened after I received the proposed contract from Mr. Stickney.

Q. 68. Did it happen before or after the time that Mr. Krabbe threatened you with contempt proceedings when the woman purchased the phonograph records and horn ?

By Mr. MILLER.—Same objection.

A. It happened after that time.

Q. 69. How long after ?

By Mr. MILLER.—Same objection.

A. About ten to fourteen days.

Q. 70. In answer to Q. 48 you said that Mr. Krabbe came to your house and invited you to go over to Brooklyn to inspect the six hundred horns. How long after Mr. Krabbe gave you this invitation did you make the visit to Brooklyn ?

By Mr. MILLER.—Same objection.

A. About ten to fourteen days, as Mr. Krabbe called at my house the same night as that woman purchased the phonograph horn.

Direct examination closed.

Cross-examination by Mr. MILLER.

XQ. 71. Under what business name did you carry on the horn business testified to on your direct examination ?

(Deposition of Camillus A. Senne.)

A. From the very beginning of the manufacture of horns the business [399] run under the name of Peter E. Petersen and Camillus A. Senne. About four months after we took over the title of Nova Phonograph Horn Company.

XQ. 72. Was Mr. Petersen your partner in that business? A. Yes, sir.

XQ. 73. Where had Mr. Petersen been working before he went into the horn business with you?

A. He did not go into the business with me. I went into business with him.

XQ. 74. You mean he was in the business first before you went in with him? A. Yes.

XQ. 75. Where was he carrying on that business before you went in with him?

A. At 401 West 124th St.

XQ. 76. Had he ever worked for Mr. Peter C. Nielsen or with him? A. No, sir.

XQ. 77. You did not know as a fact then, did you, that Mr. Petersen worked with Mr. Nielsen while Nielsen was manufacturing horns?

A. I know for a fact that he did not work for Mr. Nielsen.

XQ. 78. What nationality was Mr. Petersen?

A. Mr. Petersen is an American citizen. I believe he was born in Denmark.

XQ. 79. Was Mr. Petersen acquainted with Mr. Nielsen? A. Absolutely not.

XQ. 80. Is Mr. Petersen living now?

A. Yes, sir.

(Deposition of Camillus A. Senne.) -

XQ. 81. Where does he live and in what business is he?

A. He lives with me at 807 Whitlock Ave., the Bronx. He is vice-president of the Reliable Gummed Tape Co.

XQ. 82. I believe this last-named company is your own company with which you are now engaged in business?

A. Our business was incorporated.

XQ. 83. What position do you hold in the company?

A. I am president and treasurer.

XQ. 84. In what year was the company incorporated? A. In the year 1908. [400]

XQ. 85. And under the laws of what state?

A. Of New York.

XQ. 86. What is your own nationality or birth-place? A. I was born in Germany.

XQ. 87. At what place? A. At Ferrette.

XQ. 88. In what year did you come to the United States? A. In the year 1893.

XQ. 89. When did you give up the phonograph horn business?

A. In the latter part of 1906 or the early part of 1907.

XQ. 90. What business did you go in then?

A. I did not go into any business as I had been in business selling phonographs and records, and I kept on doing the same.

XQ. 91. Did you sell out your horn business?

A. Yes, sir.

(Deposition of Camillus A. Senne.)

XQ. 92. To whom?

A. I can't recall the man's name.

XQ. 93. Can you recall the date?

A. I can't recall the date, but I know and I believe it was in the early part of 1907.

XQ. 94. Where was your place of business for the manufacturing of these horns, from the beginning to the time you sold out?

A. We started in at 401 W. 124th St. We then moved to No. 2 Manhattan St., and then to No. 22 Manhattan St.

XQ. 95. From whom did you rent the store at 401 W. 124th St.?

A. It was not a store but a loft. From a party by the name of Noel.

XQ. 96. And did you say that that building was destroyed by fire?

A. That building was destroyed by fire, or part was destroyed by fire, a number of times, but it was not there where our records and papers burned up. It was in a fire at 496 East 134th St.

XQ. 97. When did you move your business from 401 West 124th St. to No. 2 Manhattan St.?

A. Some time in the year 1905.

XQ. 98. Who was your landlord at No. 2 Manhattan St.?

A. The real landlord was the Astor Estate but we sublet from a [401] party by the name of Schwartz.

XQ. 99. When did you move from there to 22 Manhattan St.?

A. In the year 1906.

(Deposition of Camillus A. Senne.)

XQ. 100. And was that the last place at which you carried on the business of manufacturing these horns?

A. No, sir. The last place we manufactured horns was at No. 22 Manhattan St.

XQ. 101. Who was your landlord at No. 22 Manhattan St.?

A. A party by the name of Mills.

XQ. 102. Now you spoke of your books, records and documents being destroyed by fire at 496 E. 134th St. How did those books, papers and records happen to be at that place and when were they destroyed?

A. All the papers were moved to 134th St. and we moved the balance of our business and we occupied the top floor that was completely destroyed by fire, which I believe was in the year 1909.

XQ. 103. Do you mean that the books and papers were stored there at the time of the fire?

A. There were stored there.

XQ. 104. Then, if I understand you correctly, you had gone out of the horn business and had stored these books, papers and records at this place in 134th St., where they were afterwards destroyed by fire?

A. Yes, sir.

XQ. 105. You spoke on direct examination of having delivered two horns from which these photographs were made to Mr. McCoy. Who is Mr. McCoy?

A. Mr. McCoy called on me and asked me if I was able to give him those horns, and I understood at that time, that he was employed by the Edison Com-

(Deposition of Camillus A. Senne.)

pany. Farther than that I don't know the gentleman.

XQ. 106. Did he offer to pay you for these horns?

A. He did not.

XQ. 107. Did you give him the horns?

A. The one horn that was fastened together by paper strips and was in very bad condition I told him he could keep, but the other horn belongs to a relative of mine and was simply loaned to him. [402]

XQ. 108. Now are you willing to give me one of those horns if I call at your place so that I can have the use of one as well as the other side?

By Mr. HICKS.—The two horns produced by Mr. Senne are at present in the possession of the Pacific Phonograph Company in San Francisco, Cal., and if complainant's counsel desires he can obtain permission from me to inspect those horns at any time. Furthermore, the complainant's counsel has photographs of each, furnished to him by me.

A. If I have any more you will be entirely welcome to them.

XQ. 109. Have you any more?

A. No, sir, but I believe that a few of them could yet be found in the different stores of the city.

XQ. 110. Is Mr. McCoy, to whom you referred, a detective in the employ of the Edison Company?

By Mr. HICKS.—Objected to as calling for hearsay testimony, it not appearing that the witness knows by whom Mr. McCoy is employed or anything about Mr. McCoy except what Mr. McCoy told him.

(Deposition of Camillus A. Senne.)

A. I do *not* *what* position he holds with the Edison Company.

XQ. 111. When he called on you did he represent himself as coming from the Edison Company?

By Mr. HICKS.—Same objection.

A. He did not.

XQ. 112. What did he represent to you?

By Mr. HICKS.—Same objection, also as incompetent, irrelevant and immaterial and as not cross-examination.

A. He asked what I knew about the horn business, and I gave him a full explanation of what experience I had, and he then asked me if I would be kind enough to loan him the two horns. I did not ask him whom he represented but simply asked him who was bringing the suit and that is where the matter ended. By him mentioning his name, I understood from another party that he was employed by the Edison Company.
[403]

By Mr. HICKS.—The last sentence of the answer is objected to as hearsay and defendant moves to strike it out on that ground.

XQ. 113. Did you have in your possession at that time the first of those horns, that is to say, the one with the metal ribs? A. I did not.

XQ. 114. Who did have it and where did you get it?

A. I borrowed that horn from a relative, a party by the name of Mrs. Ferguson, who lives at 522 West 123d St.

XQ. 115. I apprehend then after Mr. McCoy in-

(Deposition of Camillus A. Senne.)

terviewed you you went up to this relative of yours and borrowed the horn from her and delivered it to Mr. McCoy? Is that correct?

A. No, sir. Mrs. Ferguson's brother works in our factory and I simply asked him to bring the horn over in the morning on his way to work. When Mr. McCoy called the second time I turned it over to him with instruction to return it because Mrs. Ferguson thinks a whole lot of the horn, because the horn has been over to Europe a couple of times and back again.

XQ. 116. Do you know where I could procure one of those horns for myself?

A. I think I do.

XQ. 117. Where?

A. I think in one of the phonograph stores in the Bronx, a certain Mr. Blackman, who is the owner of the store, I believe he has a few of them.

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 118. Mr. Stickney, in his affidavit verified November 9, 1905, sets forth that you had then stated that you had sold your horn business, including unfinished and finished horns, tools and goodwill to a certain concern. Is it true that at that date, November 9, 1905, you had made such a sale?

A. I cannot recollect making any such statement. Furthermore, I did [404] not make a sale at that date and did not intend to sell the business, not until I was advised from a party knowing the inside of the National Phonograph Company, that they were about to include a large horn with each talking

(Deposition of Camillus A. Senne.)

machine and put the same on the market as an outfit and seeing then that there was not much show for me to manufacture horns and after receiving such information I looked around to find a buyer for the horn plant, and I sincerely believe I made a sale in the early part of 1907, long after my visit to Mr. Stickney.

Redirect examination closed.

Deposition closed.

Signature of the present witness and of the preceding witnesses waived.

By Mr. MILLER.—The reason why I was not present at 2 P. M., on September 20, 1913, to cross-examine the witness, Frank H. Stewart, as per former agreement to that effect was that I was sick at the time and could not attend. I note on the record the statement by Mr. Hicks that he requests me to proceed with the cross-examination of Mr. Stewart on September 24, 1913, in Philadelphia, Pennsylvania. I cannot agree to this but request that Mr. Stewart be produced here in New York for cross-examination at some day more satisfactory to him so that his deposition may be taken in accordance with the notice given.

By Mr. HICKS.—Defendant's counsel hereby gives notice to plaintiff's counsel that Frank H. Stewart will be produced for cross-examination on September 24, 1913, at 11:00 o'clock in the forenoon at the office of Horace Pettit, Esquire, room No. 705, Witherspoon Building, Walnut, below Broad St., Philadelphia, Pa., in accordance with the

(Deposition of Camillus A. Senne.)

notice set forth on the record on September 20, 1913, for the reasons there stated. There is no reason why the defendant should bear the expense of producing Mr. Stewart again in New York.

By Mr. MILLER.—I do not accept such notice as sufficient and unless the witness is produced here for cross-examination in accordance with the original notice I shall move to strike out his direct examination as an uncompleted deposition. [405]

By Mr. HICKS.—Complainant's counsel is requested to specify the defect of the notice and if there is any defect in the notice the defect will now be remedied. Under the Statute, in accordance with which these depositions are being taken defendant is entitled to take the depositions of a witness and to give notice to the other side after the direct deposition has been taken.

By Mr. HICKS.—As plaintiff's counsel refuses to specify any defect in the notice, defendant's counsel assumes that there is no defect.

Adjourned to Sept. 25th, 1913, 11 A. M., for the further taking of depositions at 233 Broadway, New York City.

September 25, 1913.

Met pursuant to adjournment.

Present: FREDERICK S. DUNCAN, Esq., Counsel
for Plaintiff.

LOUIS HICKS, Counsel for Defendant.

[Deposition of Ellsworth A. Hawthorne, for
Defendant.]

ELLSWORTH A. HAWTHORNE, being duly sworn as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. Ellsworth A. Hawthorne; 47; Bridgeport, Conn.; manufacturer of automobile accessories.

Q. 2. Please state what experience you have had in the manufacture of horns for phonographs and similar machines.

A. My manufacturing experience dates from about 1894. It was in 1894 that the concern of Hawthorne & Sheble made a contract with Edward F. Leeds and entered the phonograph business. In 1895 we had some correspondence with Mr. Leeds in connection with our manufacturing phonograph horns, he claiming that under contract we were not allowed to manufacture. This matter, however, was settled satisfactorily and from that date forward the firm of Hawthorne & Sheble and later the Hawthorne & Sheble Manufacturing Co. were undoubtedly the largest manufacturers of phonograph horns in the world. [406]

It was our effort to improve the reproduction from the phonograph and we gave particular attention to the horn. In 1895, 1896 and 1897 horns were manu-

(Deposition of Ellsworth A. Hawthorne.)

factured for Hawthorne & Sheble by La Forrestier and Son, we contracting with them to take their entire output of horns for phonograph use. This concern were primarily makers of band instruments. The types of horn made for us at that time by La Forrestier were horns that tapered throughout their entire length. Were made in sections and brazed or soldered together. We specialized on this particular type of horn for several years. Later we established our own manufacturing plant although at the same time using the product of La Forrestier. I understand that both father and son are dead. Later, when Hawthorne & Sheble increased their manufacturing facilities they engaged the services of one of the workmen of La Forrestier, by name, Eugene Damage. His last known address was 830 Callowhill St., Philadelphia, and he may be there at this time. Damage was in our employ for a considerable period of time, continuing the manufacturing for Hawthorne & Sheble of the type of horn referred to, i. e., one that tapers through its entire length, made of tapered and curved sections and brazed or soldered together.

Hawthorne and Sheble made various types of horns, producing various models from time to time in an effort to increase their horn business by attractiveness of design, character and quality of horn.

On the advent of the Graphophone Grand in 1898 and 1899 they specialized on horns adapted to this particular make of talking machine and produced horns of brass, silveroid, zinc, white metal, alu-

(Deposition of Ellsworth A. Hawthorne.)

minum, fiber papier-maché. A number of these horns manufactured by us previous to the year 1902 were about thirty-six to forty inches in length, tapered throughout and with a bell varying from twenty and a half or less to thirty-six inches. [407] The brass and some of the other types of horns were made of metal strips tapering and curved soldered together, whereas the aluminum horns were made with longitudinal ribs as it is a well-known fact that aluminum is not adapted to successful soldering or brazing. In fact we advertised in our catalogue that no solder was used in our aluminum horn.

We sold horns of the type referred to above to many of our customers and particularly to the following:

Pardee-Ellenberger, New Haven, Conn.

Mr. Ellenberger in conversation with me yesterday stated that he well recollected the type of horn, their purchase of same and that it was previous to 1901. We also sold the same type of horns to M. M. De Karpoff, St. Petersburg, Russia, having shipped same through Seligman and Company, Bankers.

Eastern Talking Machine Co., Tremont St., Boston, Mass.

Thomas Wardell, Lowell, Mass.

Murray Blanchard, Young Co., Providence, Rhode Island.

J. A. Foster & Co., Providence, Rhode Island.
and many other concerns.

I recollect particularly demonstrating the type of horn referred to to Mr. Douglas of Douglas & Co.,

(Deposition of Ellsworth A. Hawthorne.)

New York City, which I think was in the year 1901. It may have been 1900. At any rate it was some little time prior to Mr. Douglas's death.

We made a specialty, previous to the year 1900, of horns, of large dimensions, for exhibitor's purposes. One type of horn was made in several sections, these sections being ribbed longitudinally and portions of the horns tapering throughout its entire length. These horns were purchased from us by the Penn Phonograph Company of South 9th St., Philadelphia, and previous to the year 1900 were sold for us by Mr. T. W. Barnhill and Mr. Miller, at the present time officers of the Penn Phonograph Co., South 9th St., Philadelphia. In 1899, 1900 and 1901 we sold a large number of flower [408] horns made in imitation of a morning-glory. These horns were made of glass and had scalloped edges. The horns manufactured by us curved throughout their entire length and with tapering sections with longitudinal ribs were supplied necessarily at that time with circular bells or at least the outer edge of the horn, or large opening, was circular in form. It was not until later that the scalloped edge metal horn was manufactured by us.

Shortly after the fiber horns made by John Kaiser made its appearance we manufactured horns of papier-maché, tapering throughout their entire length, also fiber horns with riveted seams. In referring to the type of horn manufactured by us tapered throughout its entire length I refer to a copy of the *Phonographische Zeitschrift*, dated Ber-

(Deposition of Ellsworth A. Hawthorne.)

lin, May 20th, 1903, and call particular attention to the horn shown on p. 276. This is the type of horn of which we manufactured large numbers. Also on p. 286 is shown another type of horn of which we manufactured a large number. This horn tapers throughout its entire length and is made in sections.

We have, in our possession, at the present time, the old steel mandrels which were made in 1899, on which we formed this type of horn. I have several of these mandrels in my possession and I also have mandrels on which leaves were formed tapering throughout their length, wide at one end and narrow at the other.

By Mr. DUNCAN.—Objection is made to the statement of the witness in his last answer in regard to an alleged conversation with Mr. Ellenberger on the ground that the statements of the witness are incompetent and hearsay and objection is made to the witness's reference to the contents of an alleged circular or catalogue issued on the same ground.

By Mr. HICKS.—Defendant's counsel requests the witness not to state any conversations which he had with others unless those conversations took place prior to April 14, 1904.

Q. 3. In your answer to Q. 2 you fixed the date when the firm of Hawthorne [409] & Sheble entered the phonograph business by reference to a contract made with Edward F. Leeds. Can you refer to that contract and give the exact date thereof?

A. By agreement dated the 20th October, 1894, between Edward F. Leeds, Ellsworth A. Haw-

(Deposition of Ellsworth A. Hawthorne.)

thorne and Horace Sheble. The agreement referred to is the original formally executed by me.

Q. 4. At the time of that contract, October 20, 1894, was Mr. Edward F. Leeds engaged in the phonograph business; and if so, please state where and what the nature of his business was.

A. Yes, at 604 Chestnut St., Philadelphia. The firm of Hawthorne & Sheble leased a portion of their store premises to the North American Phonograph Company, of which Mr. Leeds was Philadelphia manager. When the North American Phonograph Company failed we entered into negotiations with Mr. Leeds to continue the phonograph business in the same location.

Q. 5. Had the North American Phonograph Co. failed prior to Oct. 20, 1894.

By Mr. DUNCAN.—Objected to as leading.

A. Yes.

Q. 5. As a result of the contract of Oct. 20, 1894, with Edward F. Leeds what, if anything, did the firm of Hawthorne & Sheble acquire with regard to things connected with the phonograph?

A. We acquired practically all the stock on hand in that portion of our premises leased to them, which included a large number of phonograph horns of various types, including parts, phonographs, records, cabinets and horn stands and general merchandise used in the phonograph business.

Q. 6. In your answer to Q. 2 you referred to correspondence had with Mr. Leeds in connection with your manufacture of phonograph horns. Will you

(Deposition of Ellsworth A. Hawthorne.)

refer, if you can, to any letter forming part of said correspondence and fix the exact date of the correspondence. [410]

A. I have an original letter in my possession addressed to Mr. E. F. Leeds, dated February 26, 1895, in which it is stated that we are manufacturing phonograph horns.

Q. 7. Are the horns referred to in the letter of February 26, 1895, characterized in any way?

A. The horns referred to in that letter were the type of horn being made for us at that time by La Forrestier and Company.

Q. 8. What I asked was whether the letter itself characterizes the horns referred to, in any way.

By COMPLAINANT'S COUNSEL.—I ask that the letter be marked for identification so that if it seems important the letter may be offered in evidence rather than to have its contents stated or paraphrased by the witness.

A. The letter has particular reference to the large horns that we were at that time producing and has particular reference to our manufacture of that type of horn.

Q. 9. By what individual was the letter signed?

A. Mr. Horace Sheble.

By Mr. HICKS.—The letter of Feb. 26, 1895, to E. F. Leeds, signed by Horace Sheble, is handed to plaintiff's counsel and if plaintiff's counsel desires to encumber the record it will be offered in evidence by defendant, although the letter has been referred to merely to refresh the recollection of the witness.

(Deposition of Ellsworth A. Hawthorne.)

By Mr. DUNCAN.—Complainant's counsel asks that the letter in question be marked for identification, or if defendant's counsel is not willing that it be so marked then that it should be offered in evidence, complainant's counsel agreeing that a copy may be substituted for the original.

By Mr. HICKS.—A copy of the letter referred to is offered in evidence and marked "Defendant's Exhibit, Letter of February 26, 1895, from H. Sheble to E. F. Leeds, Frank Z. Demarest, Examiner."

Q. 10. In your answer to Q. 2 you spoke of horns made for Hawthorne & Sheble by La Forrestier & Son, that tapered throughout their entire length and that they specialized on this particular type of horn. Please state whether the firm of Hawthorne & Sheble itself manufactured this particular kind of horn.
[411]

A. Yes. We engaged the services of one of La Forrestier workmen to continue making this type of horn for us.

Q. 11. When did the firm of Hawthorne & Sheble begin to manufacture this type of horn?

A. In 1898.

Q. 12. Please describe the method or process and the tools by which this particular type of horn was manufactured by the firm of Hawthorne & Sheble beginning in 1898.

A. The metal was cut in long tapering curved strips, wide at one end and narrow at the other end. After cutting the metal was placed on a curved mandrel that tapers throughout its entire length and the

(Deposition of Ellsworth A. Hawthorne.)

exact curvature and taper of the horn was thus accurately obtained. In the process of manufacture the metal strips were hammered into shape and it was due to this process that the term "Hammered Brass Horns" was used. After the strips of metal were cut and formed they were brazed or soldered together except in instances where we used aluminum or fiber or tin.

Q. 13. At the beginning of your last answer you said that "the metal was cut in long tapering curved strips." How did the strips curve?

A. The edges or what you might term the sides of the strips were curved.

Q. 13. What was the purpose of cutting the sides of the metal strips so that they curved?

A. This was necessary in order to obtain the form of horn we desired.

Q. 14. What form of horn did you actually obtain by cutting the metal strips so that the sides thereof curved?

A. A horn with a large bell at one end or opening and a small opening at the other end. These horns tapered throughout their entire length as the diameter of the opening at one end was about one inch whereas the diameter of the opening of the large end varied from six inches to 36 inches. [412]

Q. 15. At the end of your answer to Q. 12 you said that the strips of metal were brazed or soldered together except in instances where you used aluminum or fiber or tin. What was done when aluminum was used?

(Deposition of Ellsworth A. Hawthorne.)

A. These were formed with longitudinal ribs formed with what is known as the tinsmith's brake and then rolled with rolls so as to flatten the seams. We manufactured these horns in very limited quantities in the initial stages and we used rawhide mallets for clinching the seams.

Q. 16. What difference, if any, is there between "the tinsmith's brake" and the lock seam?

A. The tinsmith's brake is a tool used to make the tinsmith's lock seam.

Q. 17. What did you do when you used fiber?

A. We used rivets. For this purpose we also made use of a special riveting device which we at that time rented of Stimson Company of Brooklyn, N. Y.

Q. 18. When you riveted the edges of strips made of fiber, how did you bring the edges of the fiber strips together preparatory to riveting them?

A. The fiber strips were cut in sections, the edges brought together and overlapped and holes punched through the two pieces of fiber and riveted together.

Q. 19. Is there any term by which such a union or seam is known?

A. None other than simply the word "riveting" as applied thereto.

Q. 20. Would the expression "lap seam" describe the manner in which the strips were brought together preparatory to riveting, as described by you?

A. It would.

Q. 21. What did you do when tin was employed?

A. We used the tinsmith's brake and formed a longitudinal tinsmith's rib. This is identical with

(Deposition of Ellsworth A. Hawthorne.)

the method so long in use for making [413] stove-pipes.

Q. 22. What difference, if any, is there between the expression "tinsmith's rib" and the tinsmith's lock seam?

A. They are both expressions used by workmen to signify the same thing.

RECESS.

Q. 23. In your answer to Q. 2 you spoke of horns made from aluminum by the firm of Hawthorne & Sheble. Please describe the method and process and the tools by which Hawthorne & Sheble made these horns of aluminum.

A. The aluminum was cut in tapered strips. The edges were joined together with a longitudinal tinsmith's or what is known as the lock seam. The horns were tapered throughout and were made of various dimensions from 14 inches in length up to and exceeding 42 inches in length with large openings of various diameters from 6 inches in diameter to 36 inches in diameter. The strips of aluminum were wide at the one end and curved and tapering to the narrowest point. The tools used were tinsmith's cutting hand shears for cutting out the metal form which was done with templets. The metal was turned over on the edge in some instances with a tinsmith's brake and in others, with curved mandrels or forms where the horns were required to be tapered throughout their lengths.

Q. 24. In answer to the last question you stated that the strips of aluminum were curved. How were

(Deposition of Ellsworth A. Hawthorne.)

these strips curved?

A. The strips of metal were curved on the edges and the strips tapered from one end to the other.

Q. 25. What was the purpose of making the strips of aluminum curved along their edges?

A. So as to make a horn tapering throughout its entire length.

Q. 26. In making these horns from strips of aluminum, did you use a mandrel or form; and if so, please describe the mandrel or form [414] and the manner of its use.

A. The mandrels were tapered, were made of cast steel and were generally of the curvature desired in the finished product.

Q. 27. Of how many strips of aluminum did the horns made by the firm of Hawthorne & Sheble as described by you consist?

A. From 2 to nine, according to the size horn desired.

Q. 28. When did the firm of Hawthorne & Sheble begin to make horns of strips of aluminum in the manner described by you? A. 1898.

Q. 29. Please give a definite description of the shape of the horn of aluminum made in the manner described by you by the firm of Hawthorne & Sheble beginning in the year 1898.

A. I think the best idea can be obtained from a Kaiser horn. We attempted to imitate that type of horn in metal, brass, aluminum, etc. So as to give a fixed idea of the type of horn I am referring to I now refer to the type of horn shown on p. 276 of the

(Deposition of Ellsworth A. Hawthorne.)

Phonographische Zeitschrift, dated Berlin, May 20, 1903. The horn I refer to is the center of the three illustrated on p. 276. I have designated this horn by writing opposite thereto my initials "E. A. H." and the present date, 9/25/13.

Q. 30. Did you produce these pages, 275, 276, 285 and 286 of the *Phonographische Zeitschrift* for May 20, 1903? A. I did.

Q. 31. Please state when and how you obtained the same.

A. I received same direct from the publishers through the mail and it probably reached me some time in the early part of June, 1903.

Q. 32. Where did you receive these pages of that publication?

A. At my place of business in Philadelphia.

Q. 33. Where have these pages of that publication been since you received them in the early part of June, 1903?

A. In my library along with other and similar publications.

By Mr. HICKS.—The pages of the publication referred to are offered in evidence and marked "Defendant's Exhibit, *Phonographische Zeitschrift*, Published in Berlin, May 20, 1903, Frank Z. Demarest, Examiner." [415]

Q. 34. On p. 276 of the exhibit just offered in evidence appear the following words beneath the horn marked with your initials and the present date:

(Deposition of Ellsworth A. Hawthorne.)

“Specialitat: Phonographen-Trichter in Aluminium, Messing etc. etc.”.

These words translated into English apparently mean:

“Specialty; phonographic funnel (horn) in aluminum, brass, etc. etc.”

Assuming that aluminum is used in the manufacture of the horn marked with your initials and the present date, can you state by what method that horn was made to secure a horn of that shape?

By Mr. DUNCAN.—Objected to as hypothetical and as founded on no proof that would justify the inquiry.

A. The method of manufacture of this horn might vary according to the methods of the manufacturer, the length and diameter, of the horn, etc. Very small horns of that shape and type could probably be formed by spinning but this is not possible with larger horns on account of the depth of the draw.

Q. 35. Was there any method employed by the firm of Hawthorne & Sheble, prior to May 20, 1903, in the manufacture of horns of aluminum, having the shape like the shape of the horn marked with your initials and the present date?

A. Our method of manufacture has been previously described by me, consisting of cutting the strips of metal to form. Constructing the tinsmith or lock seam by forming the same with hand tools when machine tools could not be employed and permanently securing the seams by use of a beating machine, rawhide mallets used by hand. The Peckstow & Wilcox

(Deposition of Ellsworth A. Hawthorne.)

Co. of Stonington, Conn., have manufactured tools for this class of work to be operated by hand and by power for probably the last forty years.

Q. 36. Please state, if you know, whether or not it is possible, in a practical way, to join together strips of aluminum by means of solder or other similar material. [416]

A. From time to time claims have been made that a flux has been found and compounds prepared that will enable the successful soldering of aluminum, but I have tried such propositions, covering a manufacturing experience of 15 or 18 years and gave it up long ago. This is due to the fact that aluminum is a very greasy metal and solder separates most unexpectedly. The joints will not hold permanently together.

Q. 37. In your answer to Q 10-15, inclusive, you described the method or the process by which the firm of Hawthorne & Sheble, beginning in 1898, manufactured horns from tapering strips of metal, curved at their edges, by brazing or soldering together the edges of the tapering curved strips of metal. Please state how many of such strips of metal were employed by the firm of Hawthorne & Sheble in manufacturing such horns in the manner described by you.

A. From two to nine, according to the sized horn desired.

Q. 38. Please look at U. S. Patent No. 735,815 of April 21, 1903, to Barnes and particularly to Fig. 3 thereof; and state whether the firm of Hawthorne & Sheble ever manufactured horns for phonographs

(Deposition of Ellsworth A. Hawthorne.)

like the horn shown within the casing illustrated in Fig. 3.

A. I have examined the patent above referred to. Hawthorne & Sheble Manufacturing Co. manufactured for the Ohio Talking Machine Co. of Toledo, Ohio, with which Mr. Barnes is connected, horns of a type identical to that shown in the illustration. These horns were made in sections and were telescopic.

Q. 39. Please describe the manner in which the different sections of the telescopic horn were made by the Hawthorne & Sheble Mfg. Co.

A. Each section was a tapered section and each section was secured together with longitudinal rib seams.

Q. 40. Please describe the number of sections employed and the form of the edges or sides of the sections.

A. My impression is that the edges of this particular type of horn were tapered but not curved. I do not recollect how many. [417]

Q. 41. In your answer to Q. 2 you referred to a fiber horn made by John Kaiser. Please look at "Defendant's Exhibit, Phonograph of Kaiser Horn of 1898," and state whether the Kaiser horn referred to by you was similar to or different from the Kaiser horn shown in that exhibit.

A. It was similar in shape and other features, such as having been made of several sections of metal. Our horns were made with the lock seam used in metal devices, whereas the Kaiser horn differs in

(Deposition of Ellsworth A. Hawthorne.)

view of its probably being glued or pasted together in sections.

Q. 42. In your answer to Q. 2 you stated that shortly after the fiber horn made by John Kaiser appeared you manufactured horns of papier-maché, tapering throughout their entire length, also fiber horns with riveted seams. Do you mean by your last answer that you also made similar horns of several sections of metal?

A. The aluminum horn that I have had reference to in my testimony was a horn in as close imitation of the Kaiser horn as we could make it out of metal. The papier-maché horns were made by a man we employed by the name of Hermann, who at that time resided in Catony, Penn. These horns were formed over a mold and were almost exactly the shape of the Kaiser horn.

Q. 43. Please look at the Nielsen Patent in suit, No. 771,441, particularly Fig. 3 thereof, and state whether you ever saw a horn upon the market in this country, made of several sections of metal joined together at their edges by a seam such as that shown in Fig. 3, consisting of two upwardly-extending flanges, joined together.

A. I have a very faint recollection of having seen a horn of that character constructed in accordance with figure 3. From a manufacturing standpoint this is not a practical mechanical proposition. It, of course, can be made readily; but the horn would have an unfinished, crude appearance and on account of the method of forming the external ribs it would

(Deposition of Ellsworth A. Hawthorne.)

probably separate or the metal not being [418] fastened securely together would probably cause the horn to rattle. I do not think a horn constructed in accordance with the drawings referred to is a good manufacturing proposition, and not as well adapted for phonograph reproducing purposes as either the all-brazed horn or the horn constructed with the tin-smith lock seam. I have made a study of phonograph sound reproduction for almost twenty years. There is absolutely no foundation whatever in the claim that a horn made with longitudinal ribs will reproduce phonographic music or otherwise superior to other types of horn.

Q. 44. Were you familiar with the horns for phonographs upon the market in this country for a period of years?

A. I have been familiar with all types of horns since 1887, when the phonograph was first brought to me by the North American Phonograph Company and they requested me to use it in my shorthand work. I have been interested in phonographic reproduction up to about 1909 as a business.

Q. 45. When did the firm of Hawthorne & Sheble cease to do business as a copartnership?

A. In the year 1900; it was April 20th, 1900.

Q. 46. When did the corporation of Hawthorne & Sheble Mfg. Co. begin to do business and when did it cease to do business?

A. It started business on the date of incorporation, April 20th, 1900, and discontinued in June, 1909.

Q. 47. During the time that you were familiar with

(Deposition of Ellsworth A. Hawthorne.)

horns for phonographs in this country, from 1887 to 1909, did you ever know of a horn going into use, having seams consisting of flanges, such as are shown in Fig. 3 of the Nielsen Patent in suit?

A. I do not recollect a horn in general use constructed as per the drawings shown in the patent.

Q. 48. Have you in your experience with horns for phonographs made any tests of the sound-producing qualities of such horns?

A. I have tested every type of horn that has been offered to the public and as they appeared. Each maker claimed particular advantages for his type of horn. The successful reproduction, however, [419] depends upon the dimensions more than on any other feature.

Q. 49. Please describe the manner in which you tested the sound-producing qualities of different horns for phonographs, either by yourself or with others.

A. There were faddists with horns the same as in motor cars. It was my business in selling horns to produce a horn that would suit the idea of the purchaser. In actual comparative tests, however, when it was desired to obtain results, it was my custom to seat the listener with his back towards the horn and then ask them to designate which type of horn was in use. My theory was that the eye largely determined the type of horn they preferred as it was more in harmony with their ideas. I have frequently had horns brought to me for test purposes and have tested such horns against an ordinary type of horn

(Deposition of Ellsworth A. Hawthorne.)

as being the best more often than they have selected their particular model.

Q. 50. Is there any difference in the sound-producing qualities of a horn by reason of the construction of a horn with one rib or with two or more ribs running longitudinally of the horn?

A. Absolutely none.

Q. 51. In your answer to Q. 48 you said that the successful reproduction depends upon the dimensions more than on any other feature of a horn for phonographs. Please state what dimensions of the horn you refer to.

A. The character of reproduction obtained varies according to the characteristics of the phonograph platen or record. I have found in experimenting that better results were obtained by a horn with a wide diameter at the bell when it was desired to reproduce the female voice. A base voice will reproduce satisfactorily with almost any type of horn as the records are made [420] with a slower frequency of vibration as compared to the soprano or such instruments as the piccolo.

Q. 52. I show you a photograph of p. 8 of the *Talking Machine World*, published in New York, N. Y., in January 15, 1905, and ask you to state whether that is an advertisement of the Hawthorne & Sheble Mfg. Co., with which you were connected.

A. It is.

By Mr. HICKS.—The photograph referred to is offered in evidence and marked “Defendant’s Exhibit, Advertisement of Hawthorne & Sheble Mfg.

(Deposition of Ellsworth A. Hawthorne.)

Co. in the Talking Machine World for January 15, 1905, Frank Z. Demarest, Examiner."

Q. 53. The photograph shows two horns. Please state whether those two horns were *manufactured Hawthorne & Sheble Mfg. Co.*; and if so, please compare the sound-producing qualities thereof.

A. Yes. The upper horn illustrates the type of horn manufactured by Hawthorne & Sheble Mfg. Co., 42 inches in length and with a 24-inch bell. We manufactured similar horns 52 inches in length, 72 inches in length and with a 28 inch bell.

The lower cut illustrates the well-known type of flower horn and was about 24 to 30 inches in length with an opening at the extereme end 20 to 24 inches in diameter. I consider the horn illustrated at the top of the page a superior reproducing horn as compared to the flower horn on account of its dimensions as previously stated.

Q. 54. By what name, if any, is the upper horn known to the trade?

A. As the Black and Gold horn.

Q. 55. How many seams, if any, did the Black and Gold or B. & G. horn have?

A. This varied according to the size of the horn, one, two and more.

Q. 56. Did it make any difference in the reproduction of sound from a phonograph record whether the black and gold horn had one [421] seam or more than one seam?

A. It is impossible to detect any difference.

Q. 57. Please compare the horns made of several

(Deposition of Ellsworth A. Hawthorne.)

sections of metal brazed together at their edges, by the firm of Hawthorne & Sheble beginning in the year 1898, as described by you, with the so-called flower horn shown in the advertisement to which you have just referred with respect to the sound-producing qualities of the two horns.

A. I have always considered that the best reproducing horn for phonograph use that I have ever listened to have manufactured or known to be manufactured was the horn introduced to the phonograph used by Hawthorne & Sheble and known as the concert full-spun horn, 56 inches long, with bell from 24–30 inches in length. The horn that I refer to is not illustrated in the advertisement. The horn that I refer to as the full-spun concert horn is a horn made of several sections of metal and brazed together at their edges and what was termed by Hawthorne & Sheble in their advertisements as the full-spun horn.

Q. 58. Is the full-spun horn the horn made according to the process described in your answers to Qs. 12–14? A. Yes.

Q. 59. Please look at the paper which I hand you and state, if you know, what it is.

A. It is a circular in regard to glass horns, issued by the Hawthorne & Sheble Mfg. Co., in the year 1900.

Q. 60. Is that one of the original circulars; and if so please state who has produced the same.

A. It is. I produced it myself.

Q. 61. How long has it been in your possession?

A. Since 1900.

By Mr. HICKS.—In view of the objection made

(Deposition of Ellsworth A. Hawthorne.)

by plaintiff's counsel to "Defendant's Exhibit, Photograph of Hawthorne & Sheble Mfg. Co.'s Advertisement of Glass Horns" defendant offers in evidence the circular produced by the witness and the same is marked "Defendant's Exhibit, Hawthorne & Sheble Mfg. Co., Advertisement of 1900, of Glass Horns, Frank Z. Demarest, Examiner"; and defendant withdraws the said exhibit photograph.

Q. 62. Please state whether any question arose between Hawthorne & [422] Sheble Mfg. Co. and anyone claiming title to the Nielsen Patent in suit, No. 771,441, which I have shown to you, with respect to the right of the Hawthorne & Sheble Mfg. Co. to manufacture horns such as those shown by the lower horn in "Defendant's Exhibit, Advertisement of Hawthorne & Sheble Mfg. Co. in the Talking Machine World for January 15, 1905."

A. On Feb. 10, 1906, when the firm of Hawthorne & Sheble Mfg. Co. had located at Oxford & Mascher Sts., in Philadelphia, they received a call from one William H. Locke, Jr., of No. 46 W. 34th St., New York City, who represented that he was interested in the Nielsen Patent at issue. Mr. Locke at that time proposed a form of combination between the Hawthorne & Sheble Mfg. Co.'s interests and other manufacturers of horns. Nothing, however, came out of the interview and we did not hear from Mr. Locke again, to my knowledge.

Q. 63. Did Mr. Locke state that the Company in which he was interested owned any other patent?

A. According to my recollection he stated that

(Deposition of Ellsworth A. Hawthorne.)

they also owned the Villy Patent.

Q. 64. Did you investigate the Nielsen Patent at the time of Mr. Locke's call upon you?

A. We did.

Q. 65. What reply did you make to Mr. Locke, with reference to the Nielsen Patent?

A. I can find no evidence and have no recollection of any formal reply or statement to Mr. Locke other than the verbal statement made to him by Mr. Sheble and myself at the time he called to see us, and that was to the effect that if he desired to litigate we were prepared, although I believe we made the statement at the time if he had anything to propose after seeing the other manufacturers to let us hear from him.
[423]

Q. 66. Did Mr. Locke threaten suit under the Nielsen Patent?

A. I do not recollect his having done so.

Q. 67. Did you continue to manufacture and sell the flower horns shown by said advertisement after Mr. Locke's call upon you?

A. We did up to and until the time Hawthorne & Sheble Mfg. Co. discontinued business.

Q. 68. Was any other threat made against the Hawthorne & Sheble Mfg. Co. with respect to the Nielsen Patent here in suit?

A. Yes, on Sept. 22, 1904, a communication was received from attorney Matthew P. Doyle, threatening suit under the patent at issue.

Q. 69. In what form was this threat?

A. In a letter dated September 22d, 1904, and

(Deposition of Ellsworth A. Hawthorne.)

signed by said "Matthew P. Doyle, M. K." I produce the letter herewith.

Q. 70. When was this letter received?

A. September 24th, 1904.

By Mr. HICKS.—The letter, produced by the witness, is offered in evidence and marked "Defendant's Exhibit, Letter of Matthew P. Doyle to Hawthorne & Sheble Mfg. Co., dated September 22, 1904, Threatening Suit Under the Nielsen Patent, Frank Z. Demarest, Examiner."

Q. 71. Was any suit ever brought pursuant to Mr. Doyle's letter? A. No.

Q. 72. Have you ever known of any suit brought under the Nielsen Patent here in suit, other than the present suits against the Pacific Phonograph Company and Babson Bros., Inc., and the suit brought against Sherman, Clay & Co. recently, and all in California? A. No.

Q. 73. Do you know whether in September, 1904, and thereafter down to the present day, others than Nielsen and those claiming title to the Nielsen Patent have been manufacturing horns for phonographs like the lower or flower horn shown in "Defendant's Exhibit, Advertisement of Hawthorne & Sheble Mfg. Co. in the Talking Machine World for January 15, 1905"? [424]

A. They have. Such concerns as the Tea Tray Company of Newark, N. J., the Standard Metal Mfg. Co. of Newark, N. J., and others have manufactured these horns extensively and in volume.

Q. 74. Did the firm of Hawthorne & Sheble ever

(Deposition of Ellsworth A. Hawthorne.)

manufacture any horns or megaphones for the U. S. Navy; and if so, please state when and describe the horns.

A. We made two large horns. I understood at the time they were for the battleships "Iowa" and "Oregon" each being twelve to fourteen feet in length. These horns were made of strips of metal tapered throughout their length, with curved edges and of several sections.

Q. 75. About how many sections?

A. That I do not recollect, but there must have been several on account of the nature of the construction of the horn and their immense size. We made a photograph of the horns at the time, but I have not been able to find the photographs.

Q. 76. When did the firm of Hawthorne & Sheble make these two large horns for the U. S. Navy?

A. By conferring with others who were in my employ at the time I have set the date as 1898. It may have been 1899.

Q. 77. Was any event of importance taking place with reference to which you could fix the date?

A. It was about the time of the Spanish War.

Q. 78. You said that the horns for the battleships consisted of several tapering sections having curved edges. What was the effect of having the edges of the tapering sections curved?

A. To make a horn or megaphone tapering throughout its length.

Q. 79. I show you a horn marked "Exhibit 'B,' John H. George, Ellsworth A. Hawthorne." Please

(Deposition of Ellsworth A. Hawthorne.)

state what you know of that horn.

A. This was a type of horn that was designed by Mr. Sheble and under the impression that it would make a superior reproducing horn. We made several of this type but did not find a ready market for [425] them and did not continue with their manufacture. The model referred to is one of the first that was made and was made previous to the year 1902.

Q. 80. For what purpose was this fluted horn used? A. For reproducing.

Q. 81. For what purpose or purposes were the horns heretofore described in your deposition as made by the firm of Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co. used?

A. For reproducing and recording.

Q. 82. Were any of the horns heretofore described by you in your deposition constructed specially for recording?

A. We tried every type of horn that we manufactured for recording purposes and we used a horn about 36 inches in length and with a bell about 36 inches in diameter for making records in our laboratory in Phil. in the year 1899, for recording orchestra records.

Q. 83. And what did you do in trying your horns for reproducing?

A. They were carefully tested in our special reproducing booths and also in our recording laboratory.

Q. 84. Did you use the same horn for recording and reproducing, or did you use a horn of one kind

(Deposition of Ellsworth A. Hawthorne.)

for recording only and a horn of another kind for reproducing only?

A. The horns were used by us for both recording and reproducing. We recommended certain types of horns as being preferable to other types for recording.

Q. 85. What horns did you recommend for recording, particularly?

A. This depended upon the character of the recording work. For a single artist we would usually use a horn 26 to 30 inches in length without bell, tapered from end to end and with a longitudinal seam from end to end.

Q. 86. When you sold your horns such as the horns made of tapering metal strips with curved edges, brazed together and such as the horns made of aluminum tapering strips with curved edges joined together by lock seams, for what purposes were they intended?

A. For reproducing and they were also used for recording purposes. [426]

Q. 87. Please state all the different materials that were used by the firm of Hawthorne & Sheble and the Hawthorne & Sheble Mfg. Co. in the manufacture of horns for phonographs prior to the end of the year 1903?

A. Brass, silveroid, which was a zinc metal base, glass, wood, iron, steel, fiber, papier-maché, celluloid, leather, cloth, copper, tin and aluminum.

Q. 88. When you used metal how did you join the edges of the metal together?

(Deposition of Ellsworth A. Hawthorne.)

A. By brazing, butt seam or joint, lap seam, the tinsmith's lock seam, soldering.

Q. 89. Is the butt seam shown in the fluted horn which is evidence? A. Yes.

Q. 90. Did you ever use any of these methods when fiber, papier-maché or wood was used?

A. The fiber horns were riveted with a lap seam; the papier-maché with a molded seam; the wood seams were glued together.

Q. 91. Was it possible, when using paper or fiber or wood, to employ a method employed when metal was used for joining together the edges of the material? A. No.

Q. 92. Were these methods for joining together the edges of the different materials mentioned generally known in the art of making horns and other things made of like materials?

A. Yes, when Hawthorne & Sheble purchased an interest in the talking-machine business from Edward F. Leeds they purchased a large number of horns that were joined together with the lock seam or tinsmith's seam. Other manufacturers of horns used the same methods employed by Hawthorne & Sheble as they were well known in the art.

Q. 93. For how long a period were these several methods known in the art, to your knowledge?

A. From 1887 on, as long as I have been acquainted with the business. [427] The same identical process of manufacture was employed in other and similar manufactured products, such as household cooking utensils, funnels, etc., and has been as far as I can

(Deposition of Ellsworth A. Hawthorne.)

carry back my recollection of the business.

The examination of Mr. Hawthorne is adjourned to Monday, September 29, 1913, at 2:15 P. M., same place.

Adjourned to Friday, September 26, at 2:00 P. M., same place.

September 26, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

[Deposition of John H. George, for Defendant.]

JOHN H. GEORGE, being duly sworn as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. My name is John H. George, age 44, residence 2341 Fairfield Ave., Bridgeport, Conn., occupation, superintendent and purchasing agent of the Hawthorne Manufacturing Co., Bridgeport, Conn.

Q. 2. Were you ever employed by the firm of Hawthorne & Sheble; and if so, when and where?

A. Yes, I was employed by the Hawthorne & Sheble Mfg. Co. at Mascher and Oxford Sts., Philadelphia, in the year 1898.

Q. 3. I did not ask about the Hawthorne & Sheble Manufacturing Co., but about the copartnership or firm of Hawthorne & Sheble. Please state whether you were ever employed by that firm, and if so when and where.

A. As I understand it was the Hawthorne & Sheble Mfg. Co. when I entered their employ in 1898.

(Deposition of John H. George.)

Q. 4. Was the business conducted by Messrs. Hawthorne & Sheble incorporated, to your knowledge, during the period of your employment?

A. I believe it was but at that time I was not so familiar with the circumstances of the company; I do not remember whether they [428] were incorporated when I entered their employ, or not.

Q. 5. How do you fix the time when you were employed by the firm of Hawthorne & Sheble as being in the year 1898?

A. In 1898 the Hawthorne & Sheble Company purchased or bought out a concern that was conducted by Mr. C. Beecroft and in 1901 I went to Europe and I fix the date as I knew it was three years after I had entered the employ of the Hawthorne & Sheble Company.

Q. 6. Please state at what time in the year 1901 you went to Europe. A. In June, 1901.

Q. 7. At what time did you return from Europe, on the occasion of that trip? A. September, 1901.

Q. 8. Please state what your duties were during the period of your employment by Hawthorne & Sheble from 1898 to June, 1901, when you went to Europe.

A. Foreman of the cabinet-making department. We made cabinets for phonograph records and also patterns for the various other departments in the line. The patterns were to be used in the various other departments for forming and spinning phonograph horns.

Q. 9. Did the firm of Hawthorne & Sheble manufacture talking-machine supplies before you went to

(Deposition of John H. George.)

Europe in June, 1901; and, if so, what supplies?

A. Yes, they manufactured supplies such as cases for carrying records, and various sizes and styles of phonograph horns.

Q. 10. Can you state some of the materials used by Hawthorne & Sheble for the manufacture of phonograph horns before you went to Europe in June, 1901?

A. They used brass, aluminum, silveroid, zinc and fiber, also papier-maché. That is all I can remember just now.

Q. 11. How about tin?

By Mr. DUNCAN.—Objected to as leading.

A. Tin also was used.

Q. 12. Please describe the horns made by Hawthorne & Sheble from [429] aluminum, before you went to Europe in June, 1901.

A. As near as I can remember the aluminum horns were made from longitudinal sections and secured together with what is known as the lock seam, using from one to five sections according to the diameter of the horn.

Q. 13. Please describe the shape of each section of aluminum used when from two to five sections were employed in making the horn.

A. In my recollection the sections were made with the edges tapering from the small end of the horn to the bell or the largest diameter, having a gradual taper on the edges.

Q. 14. What do you mean by "the gradual taper on the edges?"

(Deposition of John H. George.)

By Mr. DUNCAN.—Objected to as leading.

A. The edges of the horn, if straight, would result in a straight horn and showing no flare on same, but as the horns in question were made with a gradual flare it was necessary to taper the edges to obtain same. The larger the curvature the more the flare of the horn.

Q. 15. After you returned from Europe in September, 1901, did Hawthorne & Sheble continue to make horns of aluminum in the manner described by you? A. Yes, I believe they did.

Q. 16. Please describe the horns made by Hawthorne & Sheble from brass before you went to Europe in June, 1901.

A. They made various styles, one horn, particularly, was known as the all-spun brass horn and was made from sections brazed together and hammered into shape. The sections were made in longitudinal strips and in some cases consisted of from four to five sections tapering the full length of the horn and in order to obtain the flaring bell the strips were curved slightly at a point from ten to fourteen inches from the largest diameter of what is known as the bell.

Q. 17. Do you recollect whether or not Hawthorne & Sheble made any [430] horns for the U. S. Navy?

A. Yes, I recollect that they made two or three large horns but did not at the time know whom they were for. The horns in question were made, to the best of my recollection, of four or five sections and joined together with a lock seam.

(Deposition of John H. George.)

Q. 18. Do you recollect the length, approximately, of these horns intended for the Navy?

A. I believe they were from ten to twelve feet, in length, but do not remember the exact diameter of the bell.

Q. 19. Please look at "Defendant's Exhibit for Identification, Hawthorne & Sheble's Fluted Horn," which is marked "Exhibit B, John H. George, Ellsworth A. Hawthorne," and state if you ever saw that horn before and when.

A. It was my impression that this horn was first brought to my notice in 1903 and was given to understand that the horn in question was manufactured by the Hawthorne & Sheble Company.

Q. 20. Where was it that this fluted horn was brought to your attention in 1903?

A. In the plant of Hawthorne & Sheble, Mascher and Oxford Sts., Philadelphia.

Q. 21. Of what material did you make the patterns to be used in the various other departments for forming and spinning phonograph horns?

A. The material used in every instance was wood, and when mandrels and other forms were required the same were cast from the patterns made by us.

Q. 22. Please state, so far as you know, what tools were used by Hawthorne & Sheble in the manufacture of horns for phonographs, before you went to Europe in June, 1901.

A. The tools used were steel mandrels tapering the full length and were used for forming the sections after being cut and before brazing together. We

(Deposition of John H. George.)

also used a machine known as a brake and [431] grooving machine; same had been manufactured by the Peckstow & Wilcox Company for many years. The brake was used for curving the edges of the strips and the groover for locking together of same and forming what is known as the tinsmith's lock seam. They also used spinning lathes which were used for spinning and wiring the bells after the horn was brazed together.

Q. 23. Was your work directly connected with the manufacture of horns by Hawthorne & Sheble?

A. No, not directly connected, or in other words I was not personally employed on this work.

Q. 24. In what part of the factory of Hawthorne & Sheble did you do your work, before you went to Europe in June, 1901? A. On the third floor.

Q. 25. Were the horns at that time manufactured in the same building?

A. Yes, on the second floor.

Q. 26. When did your employment with the Hawthorne & Sheble concern terminate?

A. In 1909, at which time I entered the employ of the Hawthorne Manufacturing Company.

Q. 27. Where did you perform your duties during your employment by the Hawthorne & Sheble concern from 1898 to 1909?

A. In 1906 I left Philadelphia for Bridgeport and was employed there as superintendent of their Bridgeport plant until 1909. From 1898 to 1906 I was employed at Philadelphia, Pa.

Direct examination closed.

(Deposition of John H. George.)

Cross-examination by Mr. DUNCAN.

XQ. 28. Did you have anything to do with making the megaphones or large horns you referred to in your answer to Q. 17?

A. No, sir; personally I was not employed in the direct manufacture of these horns excepting in making up patterns for the forms themselves. [432]

XQ. 29. What is your recollection as to the material of which those horns were made?

A. I don't recollect the material but believe same was made of brass.

XQ. 30. What is your recollection as to the size of the several sections which you say they used in making up these horns for the Navy?

A. I could not give any specific dimensions as I only saw the horns after they had been manufactured. As previously stated I believe the horn was from ten to twelve feet in length and consequently the strips would be about the same or slightly longer.

XQ. 31. What is your recollection as to the diameter of the mouth or bell?

A. I should say that the diameter would be from thirty to thirty-six inches but am not positive on this point.

XQ. 32. How many of these big horns for the Navy did you see?

A. I saw one but believe that two were made.

XQ. 33. Did you ever see more than one?

A. I cannot remember seeing more than one.

XQ. 34. Who told you that more than one was made?

(Deposition of John H. George.)

A. General knowledge throughout the factory at the time and conversations with the various employees.

XQ. 35. What year was it that you saw one of these big horns for the Navy?

A. I believe it was in 1898.

XQ. 36. Prior to your connection with Hawthorne & Sheble Manufacturing Company with whom had you been employed?

A. Mr. Clement Beecroft at Mascher and York Sts., Philadelphia, Pa.

XQ. 37. Did you go directly from his employ to the Hawthorne & Sheble Manufacturing Company?

A. Yes.

XQ. 38. Can you state at what time in the year 1898 you entered the employ of the Hawthorne & Sheble Company?

A. I am not positive but believe about September.
[432]

XQ. 39. What time of the year was it that you saw this big horn for the Navy?

A. It was shortly after I entered their employ.

XQ. 40. Is it a fact that that horn was made before you entered the employ of that company?

A. The horn might have been made previous to the date given, but it is my impression that the horn was photographed about September or thereabouts, at which time I saw it.

XQ. 41. Is it not a fact that you had nothing to do with the patterns used in the manufacture of this big horn for the Navy?

(Deposition of John H. George.)

A. That particular horn, yes, sir.

XQ. 42. Do you mean by your last answer that you had nothing to do with making the patterns for that particular horn? A. Yes, sir.

XQ. 43. Have you been to Europe more than once?

A. No, sir.

XQ. 44. How do you fix the date when you went to Europe?

A. From various letters in my possession from my relatives in Europe, and the fact that I arrived in Liverpool on or about July 4th.

XQ. 45. Are you familiar with the so-called B. & G. horn, made by the Hawthorne & Sheble Manufacturing Company? A. Yes.

XQ. 46. Were they making that horn when you entered the employ of that company? A. Yes.

XQ. 47. During how long a period did it continue making that horn?

A. The horn known as the B. & G. was made from 1898 up to 1909.

XQ. 48. Is this so-called B. & G. horn the horn that is represented in the upper right-hand corner of Defendant's Exhibit, p. 8 of the Talking-Machine World of January 15, 1905, which I now show you?

A. Yes, sir.

XQ. 49. Did you personally take part in the manufacture of the aluminum horns or the all-spun brass horns concerning which you have testified on your direct examination?

A. To the extent of making the patterns, for forms only. [434]

(Deposition of John H. George.)

XQ. 50. Prior to 1901, when you went to Europe, did you have anything to do with the assembling of any of the horns made by the Hawthorne & Sheble Company or of cutting out or otherwise preparing the blanks or pieces from which those horns were made? A. No, sir.

XQ. 51. Did you prior to that date have anything to do with the shipping or selling of the finished horn? A. No, sir.

XQ. 52. Up to the time you went to Bridgeport in 1906, what were your duties as an employee of the Hawthorne & Sheble Company?

A. From 1898 to 1904 I was foreman of the cabinet making and woodworking department. From 1904 to 1906 I was employed as superintendent of the Mascher and Oxford Sts. plant.

XQ. 53. Do I understand that up to 1904 your duties remained the same as prior to your trip to Europe in 1901? A. Yes, sir.

XQ. 54. What time in 1904 were you made superintendent of the plant referred to?

A. I cannot recollect the exact date. But believe it was in April or May.

XQ. 55. What were your duties as superintendent of the plant referred to?

A. General supervision of all the departments.

XQ. 56. Were the horns made by the Hawthorne & Sheble Company in 1904 and subsequently made in the plant of which you were superintendent?

A. Yes, sir.

XQ. 57. Then as I understand from some time in

(Deposition of John H. George.)

1904 up to the present time you were familiar with the assembling of horns by the Hawthorne & Sheble Company, this being under your supervision as superintendent? A. Yes, sir.

XQ. 58. Since you became superintendent in 1904 you have personal knowledge of the methods followed by your Company in cutting out and assembling parts in the manufacture of horns? A. Yes, sir.

XQ. 59. Did you have anything to do with the manufacture of the fluted horn, Defendant's Exhibit for Identification, Hawthorne & Sheble [435] fluted horn, that was shown you in connection with Q. 19?

A. No, sir.

XQ. 60. You say "that it was my impression that his horn was first brought to my notice in 1903 and was given to understand that the horn was manufactured by the Hawthorne & Sheble Company." Are you prepared to say definitely whether this horn was brought to your notice in the year 1903?

A. I am fairly positive that the horn in question was brought to my notice in the year 1903 by Mr. Heller, who was then superintendent. I understood that they contemplated manufacturing a horn in quantities but as the results obtained were not satisfactory they decided not to manufacture.

XQ. 61. Who told you that the results were unsatisfactory?

A. Mr. Heller gave me that impression when the horn was first brought to my attention.

XQ. 62. You personally, however, know nothing about the alleged manufacture of this fluted horn by

(Deposition of John H. George.)

the Hawthorne & Sheble Company, do you?

A. No, sir, I did not see the horn in actual process of manufacture.

XQ. 63. You have given an affidavit for the defendant in this case, some time ago, have you not?

A. Yes, sir.

XQ. 64. In preparation for that affidavit, with whom did you confer with regard to the subject matter?

A. There was no actual conference excepting that the matter was brought up during a conversation between myself and Mr. E. A. Hawthorne.

XQ. 65. You carefully examined the affidavit that Mr. Hawthorne made about the same time, did you not? A. I believe I did.

XQ. 66. Did you go over the subject matter with Mr. Hawthorne?

A. We talked over the various details, yes.

XQ. 67. Did you also go over the subject with the attorney for [436] the defendant company, Mr. Hicks? A. No, sir.

XQ. 68. Did you examine any exhibits in connection with your affidavit?

A. Yes, exhibit "B," particularly.

XQ. 69. Did you confer with anybody else beside Mr. Hawthorne in an endeavor to refresh your recollection prior to making your affidavit in this case?

A. No, sir.

XQ. 70. Your affidavit was a comparatively short one, being to the effect that the statements contained in Mr. Hawthorne's affidavit were correct, was it not?

(Deposition of John H. George.)

By Mr. HICKS.—Objected to. The statement in regard to the affidavit in the question is not correct, and the affidavit should be shown to the witness if he is to be interrogated in regard thereto.

A. Yes, to the best of my recollection the statements as given were correct.

XQ. 71. How many kinds of aluminum horns is it your belief that the Hawthorne & Sheble Company made while you were in its employ? I refer to different styles not different sizes of aluminum horns.

A. I only know of two kinds, or styles.

XQ. 72. How many styles is it your belief or impression that the Hawthorne & Sheble Company made in aluminum horns prior to 1901, when you went to Europe?

A. I believe two styles were made.

XQ. 73. Have you on your direct examination described these styles of aluminum horns that you think were made by the Hawthorne & Sheble Co. prior to June, 1901?

A. I believe I described one style.

XQ. 74. Is that the description given in your answers to Qs. 12-14, inclusive? A. Yes.

XQ. 75. Please describe the other style of aluminum horn you believe was made by the Hawthorne & Sheble Company prior to June, 1901.

A. As near as I can recollect the other style horn was made similar to the B. & G. or the amplifying horn.

XQ. 76. In what way were these aluminum like the B. & G. made prior to June, 1901?

(Deposition of John H. George.)

A. By spinning the bell of one piece of metal and the body formed [437] of sections tapering their entire length, and joined together at the bell by a seam.

XQ. 77. What is your recollection, if you have any, as to the number of sections used in the body of the aluminum horn of the B. & G. style?

A. In the larger size I believe we used three sections, but in most cases two were used.

XQ. 78. How long did your company continue to make the aluminum horn like the B. & G.?

A. I believe they discontinued this horn about 1902 or 1903.

XQ. 79. Why, in answering Q. 15, did you hesitate some little time before you gave the answer?

A. As I knew that we had substituted zinc to replace aluminum in a number of horns we manufactured and could not recollect just what date this was done.

XQ. 80. Is it not a fact that in 1901 or early in 1902, your company give up its manufacture of aluminum horns altogether?

A. I do not recollect making any aluminum horns after that date, 1903.

XQ. 81. Have you any personal recollection of making any aluminum horn after the end of the year, 1901?

A. Yes, of the style known as the B. & G., but of a very small size.

XQ. 82. Have you any personal recollections of the manufacture of any aluminum horns after you

(Deposition of John H. George.)

got back from Europe, of the construction described by you in answer to Qs. 12-14? A. Yes, sir.

XQ. 83. You speak of the B. & G. aluminum horn as an amplifying horn. How would you describe the horn of the construction of the horns described by you in answers to Qs. 12-14?

A. The aluminum horn of my description in answers to Qs. 12-14 is more on the style of what we would call a flower horn where as an amplifying horn such as the B. & G. is made with a flaring bell.
[438]

XQ. 84. Then do I understand that the horn described by you in answers to Qs. 12-14 is not an amplifying horn?

A. All of the horns in my estimation are amplifying horns, but this was a trade term, only, and described as such in our catalogue.

XQ. 85. Why, when defendant's counsel asked you at Q. 12, "Please describe the horns made by Hawthorne & Sheble before you went to Europe in 1901," did you describe only that form of horn in your answers to Qs. 12-14 and not describe the other style of aluminum horn that you now say was made during that time of the same construction as the B. & G. horn?

A. There was no particular reason for not describing both styles excepting that I considered that the amplifying horn was not in the shape of what we term a flower horn.

XQ. 86. Why did you think it unnecessary to refer to the B. & G. aluminum horn in answer to Q. 12

(Deposition of John H. George.)

and did think it desirable to describe the form of horn that you did describe in answer to Qs. 12-14?

A. Because I considered you were more interested in this particular style horn.

XQ. 87. How did you get the impression that I was more interested in this particular style?

A. I got the impression because I knew there was litigation on the style of horn known as the flower horn and consequently confined my remarks to this particular style.

XQ. 88. You will note however that the question was not confined to any particular style but asked you for a general description of "the horns made by Hawthorne & Sheble of aluminum before you went to Europe in 1901." Did you think it desirable in making your answer to refer only to such style of horn as you thought would be of interest as bearing on the issues of this case as you understand them? A. Yes.

XQ. 89. Who told you that the flower style or shape of horn was involved in this case. [439]

A. I believe I was first informed by Mr. E. A. Hawthorne.

XQ. 90. Where did you get the impression that it was of interest in this case to describe an aluminum horn more or less of the flower shape as made by your company, prior to 1901?

A. In knowing that the case covered a horn on the style of a flower horn, I did not think it was necessary to describe the various other styles the Hawthorne & Sheble Company manufactured.

(Deposition of John H. George.)

XQ. 91. You know of your own knowldege how the all-spun brass horn to which you have referred in your direct examination was made in its different sizes?

A. To give the exact number of sections, used in each horn, no, I could not. But I do know that the strips were made in one piece and brazed together.

XQ. 92. Do you know of any all-spun brass horn being made by your company out of a single piece of metal, by spinning alone?

A. Yes, I believe this method was used with very small horns.

XQ. 93. Is it not also a fact that larger brass horns were made by your company prior to June, 1901, by spinning up circular sections for the mouth portions and smaller circular sections for the tapering portions of the horns and soldering or brazing these circular sections together?

A. I do not recollect a horn of this description, but they did manufacture a horn by spinning the bell.

XQ. 94. Are you prepared to say that prior to June, 1901, your company did not make up large brass horns by spinning the bells and also spinning the body portion in one or more circular sections, either brazing or soldering these circular sections and bell together?

By Mr. HICKS.—This line of cross-examination is objected to since if plaintiff's counsel is to inquire of every irrelevant thing done by Hawthorne

(Deposition of John H. George.)

& Sheble there will be no end to the testimony in this suit. [440]

A. I am not prepared to say that they did not manufacture the horn such as you describe, but I do not remember seeing a horn manufactured in this manner.

XQ. 95. Up to what date did your company make the all-spun brass horn as far as you know?

A. I do not believe that any number of this style horn was manufactured after 1900.

XQ. 96. Please describe, as nearly as you can, the details of the method of assembling and finishing the all-spun brass horn, prior to or during 1900.

A. The strips composing the horn were marked off from a pattern and cut by hand by means of a tinsmith's shears known as snips. After this they were brazed together and finished by spinning on a mandrel of the shape desired.

XQ. 97. Do you know whether these parts were submitted to any other treatment than cutting out, brazing together and finishing by spinning?

A. Yes, I believe the horns were hammered on a mandrel both previous to brazing and in some instances after brazing.

XQ. 98. Were they smoothed and polished after brazing?

A. Yes, the horns were smoothed out and polished after being brazed together.

XQ. 99. As a result did these horns have a smooth outer surface as well as a smooth inner surface?

A. The outer surface was much smoother than the

(Deposition of John H. George.)

inside in view of the fact that it was possible to get the tools on the outer surface and also the polishing wheels.

XQ. 100. Was the outer surface substantially as smooth as the outer surface of the horn spun out of a single piece of brass?

A. No, it was simply impossible to get this result, in view of the fact that the brazing solder did not flow evenly in certain portions of the horn. [441]

XQ. 101. Why was this style of horn substantially given up in 1900?

A. I have no means of obtaining any information regarding the discontinuance of any horn but presume that the expense was too great.

XQ. 102. Your endeavor was to get the outer surface just as smooth as possible by smoothing and polishing, was it not? A. Yes.

XQ. 103. What was the practical result of the difficulty caused by the solder in the joints of the sections?

A. As far as the reproduction was concerned, I do not believe it affected it in any way.

XQ. 104. I was not referring particularly to the reproduction but to any practical difficulty.

A. The only objection to it from my point of view would be poor workmanship.

XQ. 105. Please explain a little more what you mean by poor workmanship being a practical difficulty in this style of horn.

A. I mean by this that in brazing the operator would get too much metal on one part and too little

(Deposition of John H. George.)

in another, which would show a depression at the point where there was lack of metal, consequently would leave a mark by which we could notice that the same was brazed or secured together in some other manner.

XQ. 106. Is it not a fact that these so-called all-spun brass horns made in sections by your company prior to 1901, were unsatisfactory from the practical standpoint?

By Mr. HICKS.—This line of cross-examination objected to because the witness has not testified on the direct-examination in regard to such matters.

A. As previously stated I have no knowledge of the horn being unpractical excepting that the price was too high.

XQ. 107. Is it not a fact that your company has from time to time made small aluminum horns spun from a single piece of metal.

By Mr. HICKS.—Same objection. [442]

A. I do not recollect any such horn excepting, possibly small horns that were used in connection with the electric operating horn.

XQ. 108. Were not the small aluminum horns that you stated you believed were made by your company after Sept. 1901, made by spinning from a single piece?

A. I do not remember manufacturing a one-piece aluminum horn.

XQ. 109. The body portion of the B. & G. horn whether made in brass or aluminum or other material was made with straight though tapering sides,

(Deposition of John H. George.)

was it not? A. Yes, sir.

XQ. 110. Prior to your becoming superintendent in 1903, did you have any authority or regular duties in connection with the assembling of any of the horns made by your company?

A. I had no authority outside of my own department.

XQ. 111. Did you have anything to do with the fiber or papier maché horns made by your company prior to the time you became superintendent?

A. No, sir.

XQ. 112. Do you understand what the question at issue in this case is?

A. What do you mean by that?

XQ. 113. Do you know what the controversy is about?

A. Outside of the fact that it is a phonograph horn made up of several sections, no.

XQ. 114. Why did you think it had anything to do with the flower horn?

A. Because I knew it was or had been told that there was litigation on account of the patent issued on a certain style of flower horn.

XQ. 115. What style of flower horns?

A. A flower horn manufactured with the scalloped edges and lock joints.

XQ. 116. Where did you get this information or impression?

A. I do not recollect, but I believe it was due to my conversation with Mr. E. A. Hawthorne, on the subject.

(Deposition of John H. George.)

XQ. 117. To what extent has your company made such flower horns [443] since you became superintendent.

By Mr. HICKS.—Same objection.

A. I cannot state positively that we have manufactured a large number of this style horn.

XQ. 118. Is it not a fact that since the early part of 1905, the Hawthorne & Sheble Manufacturing Company, and during the past couple of years, the Hawthorne Manufacturing Company, with which you are now employed, had manufactured and sold, in large quantities, flower horns of the construction shown at the right-hand side, middle cut, of p. 8, of the Talking Machine World of January 15, 1905, a reproduction of which is in evidence in this case?

A. Yes, sir.

XQ. 119. Is it not a fact that these companies have sold large quantities of these horns to the Columbia Phonograph Company, and also to the American Graphophone Company? A. Yes, sir.

By COMPLAINANT'S COUNSEL.—The testimony of this witness in regard to the aluminum horns, the brass all-spun horns and to other horns alleged by him to have been made by the Hawthorne & Sheble Company, prior to 1903, is objected to on the ground that the same is incompetent, being based on hearsay and secondary evidence and because the proofs show that the witness is not in a position to give relevant testimony and a motion is therefore made and will be presented to the Court at

(Deposition of John H. George.)

the proper time to strike such portions of the deposition from the record.

XQ. 120. How can you fix 1903, as the date when you became superintendent of the Hawthorne & Sheble's plant in Philadelphia?

A. I believe you are wrong in the date. I said 1904. Because in 1906, I was transferred to Bridgeport to take charge of the Bridgeport plant and knowing that I had been superintendent of the Philadelphia plant for about two years previous enabled me to fix the day.

XQ. 121. I note that in XQ. 120, I, by mistake, mentioned 1903, as the date when you became superintendent of the Philadelphia plant, whereas your testimony in answer to XQ. 52-54, was that it was some time in 1904. Do I understand that you fix the year solely because it was [444] about three years before you went to Bridgeport?

A. Yes, sir.

XQ. 122. And how did you fix the date when you went to Bridgeport as 1906?

A. I fix the date from the date on which our lease was made for the Bridgeport plant, also the lease on the house I resided in.

XQ. 123. Have you those leases with you?

A. No, sir; I have not.

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 124. Does the Hawthorne Manufacturing Company with which you are now connected manufacture horns for phonographs?

(Deposition of John H. George.)

A. I understand from your question that this is an amplifying horn. And we do manufacture a few of this style to-day.

RDQ. 125. What style of horns for phonographs does the Hawthorne Manufacturing Company manufacture to-day?

A. Flower horns and amplifying horns made of tin, brass and steel.

RDQ. 126. Has the Hawthorne Manufacturing Company manufactured or sold horns for phonographs in large numbers since it was organized?

By Mr. DUNCAN.—Objected to as indefinite.

By Mr. HICKS.—See XQ. 128.

A. The Hawthorne Manufacturing Company does not manufacture phonograph horns in large quantities and have not done so since their incorporation. The principal business of the Hawthorne Manufacturing Company is the manufacture of motorcycle and bicycle headlights, known as acetylene lamps. We have also other lines such as the vacuum cleaners, telephone directories, tool kits, telephone gongs, and several other novelties in the way of electric lamps, also phonograph horns, which consists of a very small portion of our business.

RDQ. 126. Have you any interest in this suit?

A. No, sir.

Redirect examination closed.

Recross-examination by Mr. DUNCAN. [445]

RXQ. 127. The Mr. E. A. Hawthorne of whom you have spoken in your testimony is an officer of the Hawthorne Manufacturing Company, is he not?

(Deposition of John H. George.)

A. Yes, sir.

RXQ. 128. He was formerly an officer of the Hawthorne & Sheble Manufacturing Co., was he not?

A. Yes, sir.

RXQ. 129. When he left the Hawthorne & Sheble Co., and organized the Hawthorne & Sheble Mfg. Co., you went with him, did you not?

A. Yes, sir.

RXQ. 130. Do you recollect that within the last 2 or 3 years the phonograph and talking-machine companies have pushed the sale of cabinet machines that have no horns to such an extent as to render the call for the former horns comparatively small?

A. I have no means of knowing whether the phonograph companies have pushed the sale of the cabinet machines, but I do not know that the demand for horn machine has increased in the last three years.

Recross-examination closed.

Deposition closed.

Signature waived.

Adjourned to Saturday, Sept. 27, 1913, at 10:00

A. M., same place.

September 27, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

**[Deposition of Frank H. Stewart, for Defendant
(Cross-examination).]**

FRANK H. STEWART resumes the stand.

Cross-examination by Mr. DUNCAN.

XQ. 83. When did you leave the employ of Haw-

(Deposition of Frank H. Stewart.)
 thorne & Sheble or of the Hawthorne & Sheble Mfg.
 Co.?

A. Some time in the summer of 1909 or 1910.

XQ. 84. What were your duties while you were connected with the corporation known as the Hawthorne & Sheble Mfg. Co.?

A. I was salesman and worked in the factory while not traveling on the road selling goods. [446]

XQ. 85. Did you occupy the same position and perform the same duties that you have just described during the entire time that you were connected with the Hawthorne & Sheble Mfg. Co., if not, please state what were your different duties during your employment by that concern.

A. It is impossible for me to recollect or recall all of the different things that I have done during the past fifteen years.

XQ. 86. You were, however, a salesman of the Hawthorne & Sheble Mfg. Co., throughout the entire period of your employment by that concern?

A. As before stated I traveled on the road and worked in the factory.

XQ. 87. Where was the factory or where were the factories of the Hawthorne & Sheble Mfg. Co., located?

A. 1027 Ridge Ave., Philadelphia, Pa.; Oxford & Mascher Sts., Philadelphia, Pa.

XQ. 88. Were these the only factories of this company while you were in its employ?

A. No. The other factories were located at Howard & Jefferson Sts., Philadelphia, Pa.; the

(Deposition of Frank H. Stewart.)

foundry located at Front St., below Gerard Ave., and the old foundry of the Stanley B. Flagg Company.

XQ. 89. Have you now stated all of the factories of the Hawthorne & Sheble Company during the period of your employment? A. Yes.

XQ. 90. Did this company operate all of these factories during the entire period of your employment? A. No.

XQ. 91. State what factories they were operating when you entered the employ of the Hawthorne & Sheble Mfg. Co., and which factories they operated subsequently, stating about when they commenced the operation of these subsequent factories.

A. I cannot answer this question because I do not definitely or approximately recall these various dates.

XQ. 92. How many of these factories did the company operate at any one time.

A. I think they were all in operation in 1906.
[447]

XQ. 93. Which was the last of these factories to be put in operation by the Hawthorne & Sheble Mfg. Co.?

A. The foundry was the last addition.

XQ. 94. And which was the last one prior to the foundry to be put in operation?

A. I do not definitely recall.

XQ. 95. Which of these factories was being operated by the Hawthorne & Sheble Co., prior to 1900?

(Deposition of Frank H. Stewart.)

A. The plant at 1027 Ridge Ave., Philadelphia.

XQ. 96. When was the plant at Oxford & Mascher Sts., **put into operation by the Hawthorne & Sheble Co.?** A. 1900.

XQ. 97. And when was the plant at Howard & Jefferson Sts., put into operation?

A. I do not recall the exact date.

XQ. 98. Approximately how much later than 1900? A. I do not recall the date.

XQ. 99. Was it later than 1900 or prior?

A. The factory at Howard & Jefferson Sts., was occupied after 1900.

XQ. 100. Have you a definite recollection when the factory at Oxford & Mascher was put into operation by the Hawthorne & Sheble Co.? A. No.

XQ. 101. May it have been later than 1900, when this factory was put into operation?

A. I do not recall the exact date.

XQ. 102. In which of the factories of the Hawthorne & Sheble Co., did you perform any duties while connected with that company?

A. All of them.

XQ. 103. What goods were made in the Ridge Ave. factory of the Hawthorne & Sheble Company?

A. Our catalogue shows the different goods.

XQ. 104. Please state from your own recollection what goods were made in the Ridge Ave. factory of the Hawthorne & Sheble Mfg. Co.

A. The Hawthorne & Sheble Mfg. Co., were not organized at that time.

XQ. 105. At what time?

(Deposition of Frank H. Stewart.)

A. At 1027 Ridge Avenue. [448]

XQ. 106. What did you mean then in answer to XQ. 87, reading, "Where was the factory or where were the factories of the Hawthorne & Sheble Mfg. Co.," and you answered "1027 Ridge Ave., Philadelphia, Pa.; Oxford & Mascher St., Philadelphia, Pa.," and when in answer to XQ. 92, you stated with reference to the factories you had previously named "I think they were all in operation in 1906." You now mean that the Hawthorne & Sheble Mfg. Co. did not at any time operate a factory at 1027 Ridge Ave., or what do you mean?

A. As I recall the style of the firm was Hawthorne & Sheble at 1027 Ridge Ave.

XQ. 107. And do you mean that when the Hawthorne & Sheble Co., was formed it ceased to operate the factory at Ridge Ave.?

A. Some time about that date.

XQ. 108. What factory did the Hawthorne & Sheble Mfg. Co., first operate?

A. As I was not a member of the firm, merely an employee, the different styles and names of the firm and dates of change I do not know.

XQ. 109. Was the Ridge Ave. factory abandoned by the Hawthorne & Sheble Mfg. Co., or its predecessors, Hawthorne & Sheble in favor of some other factory? And if so about what time?

A. The quarters or space at 1027 Ridge Ave. was not sufficient to accommodate the growing business. Therefore the larger quarters at Oxford & Mascher Sts. were moved to.

(Deposition of Frank H. Stewart.)

XQ. 110. And was it some time after the factory at Oxford & Mascher Sts., that the factory at Howard & Jefferson Sts. was occupied by the company?

A. Yes.

XQ. 111. Then as I understand either the firm of Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co. first occupied the factory at Ridge Ave. and afterwards gave that up in favor of the factory at Oxford & Mascher Sts. and subsequently added the factory at Howard [449] & Jefferson and still the foundry on Front St., near Gerard.

A. Yes, that is as I recall the order in which the factories were operated.

XQ. 112. Who was the superintendent or who were the superintendents of the Ridge Ave. factory?

A. A. W. Heller.

XQ. 113. Was he the superintendent during the entire time that you had knowledge of this factory?

A. I do not recall.

XQ. 114. Do you know of any other person who was superintendent of that factory? A. No.

XQ. 115. Who was the superintendent or who were the superintendents of the Oxford & Mascher Sts. factory while you were in the employ of the Hawthorne & Sheble Co. or its predecessor?

A. Mr. Heller was succeeded by Mr. George.

XQ. 116. What duties did you perform in the Ridge Ave. factory? A. Errand boy.

XQ. 117. What duties did you perform in the Mascher & Oxford St. factory?

A. My duties were various. I worked in the office,

!(Deposition of Frank H. Stewart.)

part of the time, and in the factory at other times.

XQ. 118. What work did you do in the factory?

A. Not very much.

XQ. 119. What was the nature of the little work you did do there?

A. As I had a little inventive genius I would work out new things that might come up.

XQ. 120. Did you work regularly in any department for any given period of time? A. I did not.

XQ. 121. Did you regularly take part in the preparation or manufacture of any of the goods made and sold by your company?

A. I did, but not as a factory employee.

XQ. 122. Did you in the Oxford & Mascher Sts. factory regularly take part in the manufacture of any goods sold by your company?

A. I did not. I learned to operate the various machines. [450]

XQ. 123. You mean that you learned to operate all of the machines that were in that factory?

A. I learned to operate machines such as spinning lathes, drill presses, punch presses and the forming press, and grooving machine.

XQ. 124. I understand from your testimony that the popular horn that you regularly made and sold from 1898 or thereabouts to 1904 or 1905 was the B. & G. horn with the brass bell. Is that correct?

A. Yes.

XQ. 125. And that you also made other special horns for special purposes? A. Yes.

XQ. 126. Did you have anything to do with the

(Deposition of Frank H. Stewart.)

advertising as well as the selling of the goods of your company?

A. Advertising is a very broad proposition. As I asked Mr. Duncan what he meant in order to make my answer clear he said "public prints." This I did not have anything to do with.

XQ. 127. Did you have anything to do with getting up the catalogues or circulars of your company?

A. Yes.

XQ. 128. You are familiar with the advertisements in trade journals of your company?

A. Yes.

XQ. 129. The B. & G. horn referred to in a recent question and answer is correctly illustrated, is it not, in the upper right-hand corner of the copy of p. 8 of the Talking Machine World, of Jan. 15, 1905, which is in evidence as defendant's exhibit? A. Yes.

XQ. 130. Directly under the cut of the B. & G. horn is a cut of the so-called flower horn. Please state whether this cut correctly illustrates the style of horn that your company was offering for sale in January, 1905, and continued offering for sale while you were connected with it. A. Yes.

XQ. 131. From January, 1905, up to the time you left your company did it make and sell this style of flower horn in large quantities.

By Mr. HICKS.—Objected to as indefinite and immaterial. [451]

A. Yes, this style of horn and horns made on the same lines as this particular illustration shows were made both before and after the date you mentioned.

(Deposition of Frank H. Stewart.)

XQ. 132. From 1905 up to the time you left the employ of your company was not this silk-finish flower horn, made and sold by your company, the popular horn and the one sold by it in largest quantities?

A. In answer to that question, the phonograph business grew from nothing at all up to a big business in a few years, and during the latter part of my employment with the concern we made as many horns or more in a day than we would make in a week during the first period of my employment.

XQ. 133. Will you please read over the last question and answer it in continuation of your last answer?

A. Yes, the flower horn superseded the B. & G. horn and the other styles of horns just the same way as styles change in bonnets, dresses and almost everything else and the style in phonograph horns or sound amplifying apparatus for talking machines is still changing. While I am not in the talking-machine business at the present time, the horn machine with almost any kind of a horn attached to it has gone out of style and has been superseded by what is called the hornless machine.

XQ. 134. While you were with the Hawthorne & Sheble Mfg. Co. or its predecessor did they make the brass horn that was spun up out of a single sheet of metal?

A. Yes, the smaller sizes were made in this way.

XQ. 135. And did they also make up an aluminum horn that was spun out of a single sheet of metal?

A. We did as an experiment, but aluminum has

(Deposition of Frank H. Stewart.)

very little tensile strength and would not draw, commercially. Consequently when we would receive orders for aluminum horns they would be cut in tapering [452] sections and seamed together with the lock seam or tinsmith's seam because we did not know the art of soldering the aluminum strips together and in order to get the shape it was necessary to cut these strips with curved edges.

XQ. 136. Over how long a period did you put out the spun brass horns made from a single sheet?

A. There were not many of the small spun horns made as the small horn did not give very much of a tone.

XQ. 137. Over how long a period did you continue making and putting out the brass horns spun from a single sheet?

A. I believe Mr. Hawthorne is making horns at the present time of that style, that is, a few of them, the demand is very limited.

XQ. 138. I wish to get your own knowledge of the art, and ask how long, to your own knowledge, did the Hawthorne & Sheble Co. continue making and putting out the brass horns spun from a single sheet?

A. As long as I was in their employ.

XQ. 139. Over how long a period did the company or its predecessor put out or attempt to put out the aluminum horns spun from a single piece?

A. Until the time I left their employ.

XQ. 140. What was meant by the term "all-spun" as applied to the brass horns sold by your company?

A. The all-spun or full-spun horn was simply a

(Deposition of Frank H. Stewart.)

name and did not mean anything in the actual manufacture of the horn. Do you wish me to describe the way that the full-spun horn was manufactured by us in our factory at 1027 Ridge Ave.?

XQ. 141. Please do so.

A. A roll of brass is uncoiled on the cutting table. The pattern is next laid on the brass. The workman takes a sharp-pointed instrument like the point of a compass and scratches a line around the pattern making an impression upon the brass. The pattern is removed and the sheet is cut according to this signature. In making some horns several of these sections would be cut. The sections [453] would have a shape with tapering, curved edges so as to conform to the shape of the horn when several of these sections would be placed together over the forming mandrel. These sections would be brazed together and hammered flat and polished.

XQ. 137. There was a period of about a year when you were out of the employ of the Hawthorne & Shible Companies after which you returned to their employ, was there not? A. Yes, sir.

XQ. 138. What factory was it operating when you returned to its employ?

A. Oxford & Mascher Sts.

XQ. 139. Did the B. & G. horn supersede or practically supersede the brass all-spun horn that you have just described?

A. Yes. I might also say that the B. & G. horn superseded the tin Japanned horn.

XQ. 140. Does your recollection accord with the

(Deposition of Frank H. Stewart.)

testimony of Mr. George to the effect that the all-spun brass horn was substantially abandoned about 1900?

By Mr. HICKS.—Objected to as improper cross-examination. The testimony of Mr. George has nothing to do with the examination of this witness.

A. The full-spun horn was an expensive horn to make, and the sales were limited.

XQ. 141. Is it not a fact that the manufacture of this horn was either totally or substantially abandoned prior to the time you returned to the employ of the Hawthorne & Sheble Company, at its Mascher & Oxford Sts. factory?

A. The sale of the full-spun horn was very limited and the horns become tarnished and were a great deal of trouble to keep clean and as the phonograph was somewhat of an ornament in the house, the owners of the machines being desirous of having the machine present a good appearance changed over to the black and gold horn because there was not so much to clean on it, there being only the brass bell to polish. [454]

XQ. 142. Now will you please go on and answer the last question.

A. We did not make many of the full-spun horns at the time that you refer to.

XQ. 143. Did you make any full-spun horn of brass at the Mascher & Oxford factory? A. Yes.

XQ. 144. You were out of the employ of the Hawthorne & Sheble Companies during the year 1900 or thereabouts, were you not? A. Yes.

(Deposition of Frank H. Stewart.)

XQ. 145. Did you have anything to do with the manufacture of the big horns or megaphones for the Navy concerning which you have testified in your direct? A. No.

XQ. 146. Are you positive as to how many of these were made?

A. There were two of these horns made.

XQ. 147. How do you know that?

A. I saw them going through the factory.

XQ. 148. For whom did you sell or for whom did you make the aluminum horns that you say were made up of sections?

A. There were some made for Bettini. And we made up several samples which were shown around the trade.

XQ. 149. What became of those samples?

A. They were usually put in the scrap heap.

XQ. 150. When did you make these horns for Bettini, I mean the aluminum horns that you say were made of sections?

A. I do not recall the exact date.

XQ. 151. Approximately?

A. I do not even recall it approximately.

XQ. 152. Were these made at Ridge Ave.?

A. Some were made at Ridge Ave., and some were made at Oxford & Mascher.

XQ. 153. Over how long a period, as far as you can recollect, were these aluminum horns that you say were made in sections made?

A. The large size aluminum horns without the bell were made whenever [455] orders were received

(Deposition of Frank H. Stewart.)

for them. The aluminum horns was a specialty made to be used where space was restricted and the user did not care to have a horn stand to support the horn.

XQ. 154. What I asked was over how long a period did your company continue making aluminum horns that you say were made up of sections.

A. As long as I was in their employ. We always had a case or so of aluminum so as to fill orders promptly for these special aluminum horns.

XQ. 155. Do I understand that subsequent to January, 1905, you made up the style of horn illustrated as the flower horn on p. 8 of the Talking Machine World for Jan. 15, 1905, in aluminum as well as in other metal? A. Yes.

XQ. 156. In answer to Q. 21 of your testimony, speaking of aluminum horns for the Graphophone Grand Talking Machine you say "they were made of curved tapering sections as have been heretofore described." Will you please glance at your testimony previous to that answer and point out that place where the tapering sections referred to by you have been previously described?

A. In answer to Q. 14.

XQ. 157. You are familiar with the glass horns that were at one time offered for sale by the Hawthorne & Sheble Mfg. Co.? A. Yes.

XQ. 158. How long did that company continue to offer glass horns for sale? A. I do not know.

XQ. 159. Did they discontinue the offering of glass horns prior to your leaving the company?

(Deposition of Frank H. Stewart.)

A. Yes, I do not recall seeing any of the glass horns around the factory during the past few years.

XQ. 160. Isn't it a fact that after the advertisement of January 15, 1905, on p. 8 of the *Talking Machine World* your company ceased to advertise and ceased to manufacture glass horns? [456]

A. The glass horns were not manufactured by Hawthorne & Sheble, but were made for them by an outside concern.

XQ. 161. Is it not a fact that after January, 1905, the Hawthorne & Sheble Mfg. Co. ceased to purchase any more glass horns or to offer for sale any further glass horns than those they then had in stock?

A. That may be so.

XQ. 162. These glass horns as well as the B. & G. horns were superseded by the type of horn known as the flower horn from 1905 on, were they not?

A. Practically so, that is, as the style changed the goods we manufactured changed.

XQ. 163. The glass horn and the B. & G. brass horn were of practically the same general contour, were they not? A. They were.

XQ. 163. The one being made in glass and the other in brass? A. That is right.

XQ. 165. Is it not a fact that at one time your company made up brass horns of large size by spinning in one piece the large mouth section and spinning in one piece the smaller body section and then brazing or soldering the two circular sections together?

A. Yes, some horns were made in this manner, and some horns were formed over the grooving machine.

(Deposition of Frank H. Stewart.)

By Mr. HICKS.—Question and answer objected to as indefinite as the expression “large horn” has no meaning.

XQ. 166. Is it not a fact that some of the large brass horns made by your company were made up of three circular sections, each spun out of a single piece of brass, which circular sections were then soldered together to form the complete horn?

A. Your question on this is very indefinite, and I do not get the drift of your idea.

XQ. 167. I refer to a construction consisting of a circular portion [457] constituting the mouth of the horn spun out of one piece of metal and a joining section circular in form, but smaller than the mouth also spun out of one piece of metal and a still smaller section also circular or conical in contour spun out a single piece of metal, which three sections were joined together by soldering or brazing would constitute a complete tapering horn and I ask whether it was not a fact that some of the large brass horns of your company were made in this way.

By Mr. HICKS.—Objected to as immaterial.

A. We did not make them that way. I answer that by saying that you could not make the horn that way according to my understanding of Mr. Duncan’s question.

XQ. 168. Did not your company make a large tapering horn consisting of three sections, each smaller than the other, which sections were of conical form and that were fastened together when the horn was assembled so as to make a complete horn. A. Yes.

(Deposition of Frank H. Stewart.)

XQ. 169. Of what material was this horn made?

A. Of metal.

XQ. 170. What metal?

A. It just depended on what was ordered, tin, brass, zinc.

XQ. 171. Did you make any of these horns in aluminum?

A. Such a horn may have been made in aluminum.

XQ. 172. How were the different conical sections joined in making such a horn?

A. They were joined by the tinsmith's or lock seam.

XQ. 173. Was this style of horn known by any trade name? A. Yes, the Telescopic Horn.

XQ. 174. During what period did your company make this style of horn?

A. Horns of this kind were shown at the electrical exhibition in 1898. After that the electrical exhibition was held in Philadelphia during June and July of that year. They made it up until the time I left their employ.

XQ. 175. Have you a clear recollection of the form of the sections used in making up the horn that you say in answer to Q. 14, were made [458] in segments? A. Yes.

XQ. 176. Can you clearly recall the shape of those sections? A. Yes.

XQ. 177. Can you clearly differentiate between the horns that were made by your company prior to 1904 and those that were made subsequent thereto?

A. With some styles of horn there was no differ-

(Deposition of Frank H. Stewart.)

ence. That date does not make any difference in the manufacture of the horns. They were made the same before that date as afterwards. When a horn of a certain design or style or shape was to be made the pattern by which the segments were cut out was used. Some of the patterns would have straight edges when a straight conical shaped horn would be the desired result and patterns with curved edges would be used when a horn was desired that had an inwardly-curved conical shape. You will understand that when two straight pieces cut in somewhat of a triangular form are put together they simply make a triangle of somewhat larger shape; but, if the inwardly-abutting or joining edges of the two segments are cut out on a curve the curve on the two sections when they are joined together makes a curve which is approximately one-half of the curvature in either of the sections.

XQ. 178. Do you recollect any difficulty in connecting the longitudinal sections from which you claim the all-spun brass horn was made by your company?

A. No.

RECESS.

XQ. 179. Please describe the contour of the mouth of the tapering horn made of aluminum in sections as stated by you in answer to Q. 14.

A. The mouth that you refer to is at the large end of the horn. The large end or the mouth of the horn is flat.

XQ. 180. Were the edges of the large end scalloped or did they form a continuous circle?

(Deposition of Frank H. Stewart.)

A. They were not scalloped.

XQ. 181. Were any of the sectional horns made by your company prior [459] to January, 1905, made with scalloped edges at the mouth end of the horn?

A. Yes, the horns made of scalloped edges but not of metal.

XQ. 182. Of what substance were the horns of scalloped edges made to which you just referred?

A. They were made of glass.

XQ. 183. And these are the horns illustrated on the circular in evidence, entitled, "glass horns"?

A. Yes, there were horns made with scalloped edges but of a different design from the particular horn that I had in mind. In our catalogue during the period of our manufacture we listed probably 150 different kinds of horns; the exact number I do not know.

XQ. 184. Will you please draw on the sheet of paper that I now hand you the outline of the section that you refer to in your answer to Q. 14 as one of the sections used in making the aluminum horn there referred to.

A. I have drawn the outline of such section and for purposes of identification have marked the same with my name and the date, September 27, 1913, and the words outline of section referred to in answer to Q. 14.

XQ. 185. You have made two drawings of this section, one with a straight top to the section and one

(Deposition of Frank H. Stewart.)

with a slightly curved top to the section. Which of these is correct?

A. The last figure I drew is correct, that is the one with the curved top and bottom. In order to distinguish this I mark the first one 1 and the second one with the curved top and bottom 2.

XQ. 186. In what respect is the drawing No. 1 incorrect, if at all?

A. It is merely incorrect in outline in that the base of the triangle is shown as a straight line instead of as a curved line. In the practice of manufacture it would be curved, according to whatever design it was desired to make. When the bottom curve is curved inwardly the points where the two edges are joined together [460] makes a sharp projection at the edges whereas where the line is curved the projection point is in the middle of the leaf of the horn.

By COMPLAINANT'S COUNSEL.—Complainant's counsel asks that the two drawings made by the witness be marked for identification as "Stewart drawings, outline of section referred to in Q. 14, No. 1 and No. 2 respectively."

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 187. Please state what, if anything, Hawthorne & Sheble did in the manufacture of the Kaiser horn, such as shown in "Defendant's Exhibit, Photograph of Kaiser Horn of 1898."

By Mr. DUNCAN.—Objected to as leading.

A. Hawthorne & Sheble made horns of this design in metal with the exception that Hawthorne &

(Deposition of Frank H. Stewart.)

Sheble's horn did not curve at the end the way that the Kaiser horn curved. I call your attention to the photograph wherein the end of the horn curves upward. The Hawthorne & Sheble horn was straight in its vertical axis.

RDQ. 188. In answer to the last question you spoke of the end of the horn curving upward. Which end of the horn did you refer to?

A. I refer to the small end where the horn connection was put on.

RDQ. 189. Please describe how Hawthorne & Sheble made these Kaiser horns in metal.

A. As I recall these particular horns they were samples; they were made of aluminum and brass. The aluminum horns were seamed along the edge of the tapering sections as this was the process we used in manufacturing horns of aluminum because at that time we did not know any other way of joining the sections together except by the use of the lock seam or tinsmith's seam and as the aluminum that we used was of a narrow width it was necessary to join several sections together. With some of the horns the seam ran throughout the entire length of the horn from the ferrule to the end but we found that [461] after the horn was placed on the machine the weight of the horn caused the aluminum to buckle, that is, it would not sustain its own weight; so to obviate this difficulty of the horn buckling we used a tin end which as I recall was about ten inches long and the body of the horn was joined to the short end or the tin portion. The tin portion on these horns, which

(Deposition of Frank H. Stewart.)

were about 24 or so inches long, was, I believe, made on ends about 10 inches long similar to the short horn which was furnished by the Columbia Phonograph Company with their Eagle Graphophone.

By Mr. DUNCAN.—Answer objected to as obviously based on hearsay and argumentative conclusions.

The WITNESS.—(Continuing.) In order to make my above answer clear the Graphophone horn or horn which was supplied by the Columbia Phonograph Co. with the Eagle Graphophone was about 10 inches long. The aluminum part was fastened to this horn making the horn throughout its entire length, approximately 24 inches long.

RDQ. 190. What was the shape of each strip of aluminum employed by Hawthorne & Sheble in making these Kaiser metal horns?

A. They approximated the style and shape of the segments used for making the flower horn years afterwards, that is to say, the flower horn which we made in 1909 was made of strips which anyone else but an expert, would say were the same strips that we used in 1898 or the date that we made the Kaiser horn because our metal horns were Chinese copies of the Kaiser horn in shape and dimensions.

RDQ. 191. Please describe the sides of the strips of metal employed by Hawthorne & Sheble in making these Kaiser metal horns?

A. The sections of the metal Kaiser horn was curved, tapering sections.

RDQ. 192. When was it that Hawthorne & Sheble

(Deposition of Frank H. Stewart.)

made these Kaiser horns of curved strips of aluminum?

A. I do not recall the date but it was shortly after Kaiser made his horn and showed it here in New York among the trade and Hawthorne [462] had some metal horns made like the Kaiser horns, only with the curved tapering sides put together with the tinsmith's seam.

RDQ. 193. With reference to the time when you received the X-ray burn upon your hand, when was it that Hawthorne & Sheble made these Kaiser horns?

A. I believe it was about that time.

RDQ. 194. What has become of the stock of Hawthorne & Sheble and the Hawthorne & Sheble Mfg. Co.?

A. I do not know; I have not the faintest idea. Horns that were made up for samples would be scrapped or thrown into the scrap heap if they did not command a market. And as for knowing what became of these horns it would be as futile to look up this or try to look it up as trying to get a derby hat of the vintage of 1898.

RDQ. 195. Have you personally made any effort to find any of the horns made by Hawthorne & Sheble as described in your testimony?

A. I have. I met a friend of mine, Frank Hare, to whom one of these aluminum horns was sold. The phonograph on which the horn was used was purchased by Mr. Hare for a Christmas present for his wife Christmas, 1899. Mrs. Hare sent this aluminum horn back and had it exchanged for a brass horn be-

(Deposition of Frank H. Stewart.) .

cause brass horns were the style at that time and Mrs. Miller and several others of Hare's friends had phonographs with a brass horn attached. The horn of aluminum, which Mr. Hare got with his outfit, was one of our sample horns which I have endeavored to describe and make clear in my testimony as one sample horn made with curved tapering sections joined together on their edges, the same edges being curved inwardly and made of aluminum.

RDQ. 196. Please state whether or not Hawthorne & Sheble sold any of the aluminum horns for the Graphophone Grand Talking Machine to any of the talking-machine manufacturers.

A. They did. Some of these horns were sold to the American Graphophone Company. [463]

RDQ. 197. Please state, if you know, what are the sound-producing qualities of the horn which has been marked "Defendant's Exhibit, for Identification, Hawthorne & Sheble Fluted Horn."

A. That horn is no different in its sound-producing qualities from any other horn of the same dimensions; in fact, in the great many tests that I have made it has been found to be impossible for anyone to distinguish, with any degree of certainty, the difference in the sound reproduction of any horns of approximately the same size as to length and diameter except in that the longer the tube is or the longer the horn, the deeper the tone. On one occasion Mr. Vandergrift of the firm of Sheip and Vandergrift came to our factory with a wood horn which they have since put on the market as the Music Master

(Deposition of Frank H. Stewart.)

horn. We tried Mr. Vandergrift's horn in comparison with several other horns with the same record. Mr. Vandergrift and others who were present making the test having their backs turned to the machine. All those present having made notes as to which reproduction they considered as being the best and the result was that they were all different and Mr. Vandergrift picked out a metal horn as being the best all-round reproducing apparatus.

RDQ. 198. Please state whether there is any difference in the sound-producing qualities of a metal horn, due to the horn having one longitudinal rib or seam or having two or more longitudinal ribs or seams.

A. A horn with one longitudinal seam made the way that the Hawthorne & Sheble full-spun 56 inch brass horn was made, while seam showed was made of several sections joined together but brazed in such a manner as to make the seams invisible and this horn did produce a better musical reproduction than the other horns. There is no difference between a horn having one longitudinal seam or rib or having two or more longitudinal ribs or seams.

RDQ. 199. Referring to the B. & G. horn and to the flower horn shown on p. 8 of the Talking Machine World for January 15, 1905, one of [464] defendant's exhibits, please compare the sound-producing qualities of the two horns.

A. The reproduction from the B. & G. horn which is one of the H. & S. 42-24 E. horns, would be deeper in tone than the reproduction from the other horn. The other is shown in the advertisement under the B. & G. horn.

(Deposition of Frank H. Stewart.).

RDQ. 200. Is there any disadvantage that may result from having a considerable number of seams, say, twelve, in a horn made of metal strips, with respect to the reproduction of sound?

A. Yes. The more strips there are in making a horn commercially the greater hazard there is in having a loose joint. In practice and in my experiments with horns we found that eight or nine sections made the best working plan.

RDQ. 201. Please read "Defendant's Exhibit, Letter of Matthew P. Doyle to Hawthorne & Sheble Mfg. Co., dated September 22, 1904," etc., and state, if you know, whether the Hawthorne & Sheble Mfg. Co. had, prior to the date of that letter, manufactured flower horns such as are shown in "Defendant's Exhibit, p. 8, of the Talking Machine World for January 15, 1905."

A. I have read the letter. Yes, they did.

RDQ. 202. Did you ever hear of any suit on the Nielsen Patent, No. 771,441, which I now show you, having been brought against the Hawthorne & Sheble Mfg. Co.?

A. I did not.

RDQ. 203. Now that you have the Nielsen Patent in suit before you, please refer to Figs. 1 and 3 thereof and state whether horns for phonographs could be manufactured in a commercial way by joining together the strips of metal by the seam shown in those figures.

A. From a practical standpoint of manufacture it would not be commercially practicable to join the edges of the segments of the horn together as shown in

(Deposition of Frank H. Stewart.)

Fig. 3. The reason for this is that the sections could not be put close enough together to prevent a counter-vibration [465] between the various segments or sections of the horn. In making a horn of this type it is very necessary and important to have all of the seams tight.

RDQ. 204. Have you ever known of a horn being on the market, made as shown in Fig. 1-3 of the said Nielsen Patent, employing the seam there shown?

A. No, I never saw such construction in practice.

RDQ. 205. Please refer to p. 276 of "Defendant's Exhibit, Phonographische Zeitchrift, Published in Berlin, May 20, 1903," and state whether, at that time, May 20, 1903, there was any method known to or employed by the Hawthorne & Sheble Mfg. Co. by which the horn marked "E. A. H.—9/25/13," could be made from aluminum.

A. Certainly. That would be a very simple matter for us to do, at that date or previous to that date.

RDQ. 206. Now, at that date or previous to that date, would Hawthorne & Sheble have made that horn of aluminum, according to a method known to or employed by them at that date or previous to that date?

A. The tensile strength of aluminum is very low and cannot be drawn or spun very deep. Consequently, in order to make a horn of aluminum it would be necessary in order to get the shape that this horn has to use curved, tapering sections. It is quite possible that this particular horn, which is apparently a 24-inch horn, that is, 24 inches long, was made in tapering sections. I judge this from the fact that

(Deposition of Frank H. Stewart.)

the larger horn is apparently a 56-inch brass horn and the photograph especially referred to by you is about a little less than half the length of the larger horn and I should say would be termed a 24-inch horn. The sections of this horn, which was probably made of eight or nine sections, each section being curved inwardly with the edges turned over, were put together with the tinsmith or lock seam. [466]

RDQ. 207. On your cross-examination you were questioned in regard to a telescopic horn made by Hawthorne & Sheble, in XQ. 172. There seems to be some indefiniteness in the questions and answers as to where or how the lock seam mentioned by you was employed in these telescopic horns. Please make this clear.

A. Each section of the horn was seamed longitudinally throughout its length, there being several sections in each conical-shaped part of the horn.

RDQ. 208. Please compare the all-spun brass horn made by Hawthorne & Sheble with the so-called flower horn such as that shown on p. 8 of the *Talking Machine World* for January 15, 1905, with respect to their sound-producing qualities.

A. The full-spun horn had a deeper tone as compared to the flower horn, this being partly due to the difference in the length of the horn.

RDQ. 209. In your opinion, which, if either, is the better horn for the reproduction of sound from a phonograph record?

A. The brass horn would be more pleasant than the other; but, with phonograph horns, it is a great deal

(Deposition of Frank H. Stewart.)

like the story about the lady who, during the campaign, inquired of the man on the street, who was selling them, who would be the next president, as she wanted to buy his photograph. The man replied, "I don't know, Lady; you pays your money and takes your choice."

RDQ. 210. Please look at Fig. 2 of U. S. Patent No. 491,421 of Feb. 7, 1893, and state whether, if the funnel or horn there shown is made of three or more strips of metal joined together by the tinsmith's or lock seam, the funnel or horn would be adapted for use as a horn for phonographs and similar machines.

A. It would, and the reproduction of the sound from the phonograph from a horn made accordingly would be indistinguishable from any other phonograph horn reproduction. [467]

Redirect examination closed.

Recross-examination by Mr. DUNCAN.

RXQ. 211. Were these aluminum horns made for all the various talking machines then in the market?

A. They were designed to fit the Edison phonograph and the Columbia Graphophone.

RXQ. 212. Were the connecting ends of the horn made to fit the Edison phonograph and the Columbia Graphophone the same?

A. Yes; they were all standard size so as to fit the rubber horn connection.

RXQ. 213. Were they made in any other way?

A. Some few were.

RXQ. 214. How were they made?

A. They were made to fit the Bettini reproducer

(Deposition of Frank H. Stewart.)

with a special adapter.

RXQ. 215. In what respect were they different?

A. Merely in diameter at the small end, the Bettini reproducer being larger in diameter, as I recall, approximately an inch and a half.

RXQ. 216. State the name of the customers to whom you sold the Kaiser horn in metal just referred to.

A. I do not recall who the purchasers were; but samples were shown to various jobbers in New York City as Barkelow & Kent, 26 West Broadway, as I recall the number. Samples were shown to Bettini when Di Castero was with Bettini at the time that Bettini had offices in the Judge Building, at 110 Fifth Ave., New York City. I think Mr. Hawthorne made a special trip to New England and with some of these sample horns where they were shown to some of our old customers, Murray, Blanchard, Young & Co., Providence, R. I., J. A. Forster, Providence, R. I., Eastern Talking Machine Company, Boston, Mass.

RXQ. 214. How many of these horns were made?

A. We made quite a number, as I recall. When a new horn would be made in our factory and the sample was passed upon by Mr. [468] Hawthorne & Sheble we would run through 25 or 30 horns. These samples would be taken around by Mr. Hawthorne and myself or shipped by express to distant points like Chicago, New Orleans, San Francisco, etc., with a letter. Of course, you understand at this time in the talking-machine business we did not have a corps of traveling men such as are engaged at the

(Deposition of Frank H. Stewart.)

present time in the industry.

RXQ. 215. Do you know how many of these particular horns were made?

A. No, I do not recall exactly how many horns were made, but there were enough to send samples around to all of our good customers.

RXQ. 216. How many good customers did you have? A. I have no answer to that question.

RXQ. 216. How many letters did you send out to various people?

A. I do not know, but inasmuch as we prided ourselves on being good business people I feel certain that a letter was sent to each customer or jobber to whom a horn was shipped.

RXQ. 217. Is it not a fact that only a few of these horns were made in the form of samples?

A. I do not know whether any orders came in as a result of this campaign or not. I do know, however, that I did not get any wholesale orders from my work or solicitation.

RXQ. 218. Over how long a period of time were these samples of Kaiser metal horns shown or distributed?

A. The manufacture of these horns was incidental to our business and we shipped out in the regular course of business in the same manner as a manufacturer of any other line of goods would send or ship out samples to customers. If the style and price were right the orders came in.

RXQ. 219. Do I understand from your testimony that there were no sales made?

(Deposition of Frank H. Stewart.)

A. There were no sales made wholesale by me.

RXQ. 220. Or by anybody else?

A. Mr. Hawthorne sold some of the horns, but just how many I do not know or to whom I do not know.
[469]

RXQ. 221. Were any horns sold retail by you?

A. Yes. Horns of this character were sold retail by me, one going to Mr. Frank Hare and afterward Mr. Hare returned this horn and exchanged it for one of another style.

Cross-examination closed.

Deposition closed.

Signature waived.

Adjourned to Monday, Sept. 29, 1913, 10:30 A. M., same place.

September 30, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

By Mr. HICKS.—Defendant offers in evidence the following letters patent of the United States, Great Britain and France, together with translations of the letters patent of France, said letters patent being printed Patent Office copies:

LETTERS PATENT OF THE UNITED STATES.
No. 8,824, patented Dec. 7, 1875, to F. S. Shirley (Design).

No. 10,235, patented Sept. 11, 1877, to E. Cairns (Design).

No. 34,907, patented Aug. 6, 1901, to C. McVeety & J. F. Ford (Design).

No. 72,422, patented Dec. 17, 1867, to G. S. Saxton.

No. 165,912, patented July 27, 1875, to W. H. Barnard.

No. 181,159, patented Aug. 15, 1876, to C. W. Fallows.

No. 362,107, patented May 3, 1887, to C. R. Penfield.

No. 406,332, patented July 2, 1889, to J. C. Bayles.

No. 409,196, patented Aug. 20, 1889, to C. L. Hart.

No. 427,658, patented May 13, 1890, to J. C. Bayles.

No. 453,798, patented June 9, 1891, to A. Gersdorff.

No. 491,421, patented Feb. 7, 1893, to A. Gersdorff.

No. 534,543, patented Feb. 19, 1895, to E. Berliner.

No. 612,639, patented Oct. 18, 1898, to J. Clayton.

No. 632,015, patented Aug. 29, 1899, to G. L. Hogan.

[470]

No. 647,147, patented April 10, 1900, to F. Myers.

No. 648,994, patented May 8, 1900, to M. D. Porter.

No. 651,368, patented June 12, 1900, to J. Lanz.

No. 692,363, patented Feb. 4, 1902, to W. C. Runge.

No. 699,928, patented May 13, 1902, to C. McVeety and J. F. Ford.

No. 705,126, patented July 22, 1902, to G. Osten and W. P. Spalding.

No. 738,342, patented Sept. 8, 1903, to A. S. Marten.

No. 739,954, patented Sept. 29, 1903, to G. H. Villy.

No. 748,969, patented Jan. 5, 1904, to C. Melville.

No. 763,808, patented June 28, 1904, to H. Sturges.

No. 769,410, patented Sept. 6, 1904, to E. A. Schoettel.

No. 770,024, patented Sept. 13, 1904, to B. Ruggiero and G. Bongiorno.

LETTERS PATENT OF GREAT BRITAIN.

- No. 22,612, of 1899, to G. L. Hogan.
No. 7,594, of 1900, to W. P. Thompson
No. 9,727, of 1901, to W. C. Runge.
No. 22,273, of 1901, to W. C. Runge.
No. 17,786, of 1902, to H. Fairbrother.
No. 20,146, of 1902, to G. H. Villy.
No. 20,567, of 1902, to J. M. Tourtel
No. 5,186, of 1903, to F. C. Cockman.
No. 14,730, of 1903, to J. M. Tourtel.

LETTERS PATENT OF FRANCE.

- No. 301,583, of June 23, 1900, to Guerrero (Jose).
Translation of No. 301,583, of June 23, 1900, to Guerrero (Jose).
No. 318,742, of Feb. 17, 1902, to E. Turpin.
Translation, of No. 318,742, of Feb. 17, 1902, to E. Turpin.
No. 321,507, of May 28, 1902, to W. C. Runge.
Translation of No. 321,507, of May 28, 1902, to W. C. Runge.
No. 331,566, of April 28, 1903, to W. T. P. Hollingsworth.
Translation of No. 331,566, of April 28, 1903, to W. T. P. Hollingsworth. [471]

LETTERS PATENT OF THE UNITED STATES.

- No. 31,772, registered July 5, 1898, to John Kaiser (Trademark).
No. 811,877, patented Feb. 6, 1906, to Camillus A. Senne.

No. 725,815, patented April 21, 1903, to W. Barnes.

No. 982 (Reissue) patented June 12, 1860, to Wyberd.

No. 16,044, patented April 14, 1885, to Bailey (Design).

No. 17,627, patented August 16, 1887, to Carr (Design).

No. 19,977, patented July 1, 1890, to Miller.

No. 26,640, patented February 16, 1897, to Valdwell (Design).

No. 30,653, patented May 2, 1899, to Littlehale (Design).

No. 186,718, patented January 30, 1877, to Einig.

No. 609,983, patented August 30, 1898, to Wolhaupter.

No. 679,659, patented July 30, 1901, to Wolhaupter.

No. 693,460, patented February 18, 1902, to Takaba.

No. 701,377, patented June 3, 1902, to Norcross.

No. 758,716, patented May 3, 1904, to Storrs.

No. 798,876, patented Sept. 5, 1905, to Conger, et al.

The foregoing patents are marked "Defendant's Exhibit, United States, British and French Patents, Together with Translations of French Patents, Frank Z. Demarest, Examiner."

IT IS STIPULATED by and between counsel for plaintiff and defendant that the foregoing copies of U. S. letters patent shall have the same force and effect as if the original letters patent or certified copies thereof had been offered in evidence; and that the British and French letters patent offered in evidence shall have the same force and effect as if the

original letters patent or certified copies thereof had been offered in evidence, subject, however, to corrections by comparison with certified copies and that complainant's counsel reserves the right to object to the translations of French patents on the ground of possible incorrectness. [472]

**[Deposition of Ellsworth A. Hawthorne, for
Defendant.]**

ELLSWORTH A. HAWTHORNE resumes the stand.

Direct Examination Continued by Mr. HICKS.

Q. 94. Have you been able to find any catalogue issued by the firm of Hawthorne & Sheble?

A. Yes. I now produce the catalogue.

Q. 95. Please state when this catalogue was issued and the other facts in regard to the use of that catalogue.

A. 1898. It was used by Hawthorne & Sheble and later used by Hawthorne & Sheble Mfg. Co. It was, I believe, the first distinctively horn catalogue used by Hawthorne & Sheble.

Q. 96. At the time this catalogue was issued where was the factory of the firm of Hawthorne & Sheble located?

A. 1025 & 1027 Ridge Ave., Philadelphia.

Q. 97. And where were the offices and salesrooms of the firm of Hawthorne & Sheble located?

A. When the factory was started, 604 and 606 Chestnut St., Philadelphia and also at 44 Broad St., New York, 43 Broad St., New York and later at 297 Broad St., New York.

(Deposition of Ellsworth A. Hawthorne.)

Q. 98. Stamped upon the cover of the catalogue appears the following:

“Change of address. Please direct all communications to Hawthorne & Sheble Mfg. Co., Cor. Mascher & Oxford Sts., Philadelphia.”

What does this stamped statement mean, with regard to the use of that catalogue?

A. It indicates the change of address from 604 & 606 Chestnut St., and 1025 and 1027 Ridge Ave., Philadelphia to Oxford & Mascher Sts. We closed out our retail business in Philadelphia at 604 and 606 Chestnut St. and transferred all correspondence to the Mascher & Oxford Sts. address. This happened in the year 1900.

Q. 99. Was the factory transferred from Ridge Ave. to Mascher and Oxford Sts. at the time that the offices were transferred?

A. The Mascher and Oxford Sts. factory was established previous to our closing the store. We operated the Ridge Ave. factory for a [473] short period of time after establishing the new factory at Mascher and Oxford Sts. We continued at Ridge Ave. until our lease expired. We probably continued the Ridge Ave. plant for 4 or 5 months, to the best of my recollection.

Q. 100. Please turn to p. 21 of the catalogue and describe how the horn shown with the Graphophone Grand machine on that page was made.

By Mr. DUNCAN.—Objected to as leading.

A. This horn represents the type of horn which I have mentioned as full spun. This type of horn

(Deposition of Ellsworth A. Hawthorne.)

was made in sections, tapered throughout its length, with curved edges and brazed together and of several sections according to the dimensions of the horn.

Q. 101. Please describe the shape of the sections of which this horn for the Graphophone Grand machine was composed.

A. The sections were cut from strips of brass one end of which was wide, the strips gradually tapering. The edges of the metal were curved and shape was given to the horn so as to have it tapering throughout its entire length by forming the sections into shape by hand with hammers over mandrels.

Q. 102. Please turn to p. 33 of the said catalogue and state in whose handwriting the words written on that page are.

A. They are in my handwriting.

Q. 103. Please describe the manner in which the horns shown on that page No. 33 were made.

By Mr. DUNCAN.—Objected to as leading.

A. By cutting strips of metal tapering and curved throughout their length, wide at one end and narrow at the other, forming the horns by hand operations over mandrels to give them the necessary flaring effect. In fact, on this same page of the catalogue, p. 33, we mention "fifty-six inch with flaring bell."

Q. 104. On said page 33 it is said "these horns are made seamless." Please explain this statement.

By Mr. DUNCAN.—Same objection. [474]

A. The horns when brazed gave no evidence to

(Deposition of Ellsworth A. Hawthorne.)

the eye of having seams although in their construction seams were made or at least the edges of the metal brazed together in such a manner so that the seam could not be discerned.

By Mr. HICKS.—The catalogue just produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Catalogue of 1898 of the Firm of Hawthorne & Sheble, Frank Z. Demarest, Examiner.”

Q. 105. I show you a horn made of metal strips secured together at their edges by lock seams. Please compare this horn, which I show you, for the purposes of illustration, with the aluminum horns which were made as testified by you by Hawthorne & Sheble.

By Mr. DUNCAN.—Objected to as leading.

A. The horns made of aluminum by Hawthorne & Sheble differed from this horn as the aluminum horns were made round at the bell. This particular horn is made with scalloped leaves. We made horns with scalloped leaves previous to 1900 but they were made of glass. The aluminum horns were formed by hand and for this purpose mandrels to impart shape to the horns were used, also rawhide and wooden mallets to form seams, break edges, etc. The horn you show me is made with tools throughout. The aluminum horns we manufactured as well as the shorter type of full-spun, brazed brass horns were hand product.

Q. 106. Are there any other differences in the horn I have just shown to you and the aluminum

(Deposition of Ellsworth A. Hawthorne.)

horns that were made by Hawthorne & Sheble?

By Mr. DUNCAN.—Same objection.

A. The sections were more circular in the hand-made horn. Then again we used a special elbow for the aluminum horn. These elbows were made of Franklin metal, and were produced by a system of die casting. They were reversible, a large horn fitting in the large end of the elbow and the smaller end being adapted for the smaller type of aluminum horn.

Q. 107. Please compare this horn that I have just shown to you with the aluminum horn made by Hawthorne & Sheble with respect to the [475] manner of joining the different sections together at their edges.

By Mr. DUNCAN.—Objected to as leading.

A. Therein they are similar. The sections of the aluminum horns were made of tapering and curved strips of metal.

By Mr. HICKS.—The horn shown to the witness is offered in evidence and marked "Defendant's Exhibit, Horn Shown to Mr. Hawthorne for Comparison with the Aluminum Horns made by Hawthorne & Sheble, Frank Z. Demarest, Examiner."

By Mr. DUNCAN.—Objected to as incompetent, immaterial and not properly proven.

Direct examination closed.

Cross-examination by Mr. DUNCAN.

XQ. 108. Who made the model horn shown you on your direct examination and just offered in evidence by defendant's counsel, immediately after

(Deposition of Ellsworth A. Hawthorne.)

your answer to Q. 107?

A. Of my own knowledge I don't know.

XQ. 109. When did you first see this exhibit?

A. This morning.

XQ. 110. Is it not a model made for the purposes of this suit? A. I presume so.

XQ. 111. How long after you had moved to Mascher and Oxford Sts. did you continue circulating the catalogue you produced this morning and which was offered in evidence as "Defendant's Exhibit, Catalogue of 1898"?

A. To the best of my recollection we discontinued its use about the year 1900. Possibly we had a few copies in 1901.

XQ. 112. Did you at any time prior to 1901, make a brass horn that was spun out of a single piece of metal?

A. We made all kinds of horns spun out of single pieces of metal that were practical. You can spin metal of any kind only a certain depth. Such horns were small horns and very short.

XQ. 113. Did you, however, prior to 1901, make a brass horn that was spun out of a single piece of metal?

A. We have always made horns spun out of a single sheet of metal but they have always been small horns. [476]

XQ. 114. And have you subsequent to 1901, up to the time when the Hawthorne & Sheble Mfg. Co. went out of business made a brass horn spun out of a single piece of metal?

(Deposition of Ellsworth A. Hawthorne.)

A. Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co. made horns full-spun out of a single sheet of metal but not thirty-six, forty-two or fifty-six inches in length. Such horns were confined to small horns.

XQ. 115. Did Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co. ever make up any aluminum horns spun out of a single sheet of metal?

A. Yes. They have made them of all kinds, styles and types known to the metal trade, full-spun, out of one piece of metal, sectional, made up of several pieces of metal and in combination with other metals.

XQ. 116. What is meant by the term full-spun?

A. It was a term coined by Hawthorne & Sheble. We had to have some designation, and I coined the word "full-spun" and applied it to horns that were made of sections and brazed together because after completing the horn by cutting out the sections as previously described in my testimony, wide at one end and narrow at the other, tapering and curved throughout its length and brazed, the horns were given a finish by running a spinning tool over them. Hence I applied the word "full-spun" to the product.

XQ. 117. What was the significance of the adjective "full" in the phrase "full-spun"?

A. No particular significance except to round out the phrase.

XQ. 118. For exactly what purpose was the spin-

(Deposition of Ellsworth A. Hawthorne.)

ning-tool used in connection with your full-spun brass horn?

A. To smooth over the metal and harden it.

XQ. 119. Did it have anything to do with the shaping of the metal? A. Very little.

XQ. 120. Did it have any effect upon the shape of the horn?

A. It took out the wrinkles, smoothed up and hardened the metal. [477] The horns were given their shape and their contour before the application of the spinning tool.

XQ. 121. And are you quite positive that the spinning tool had nothing to do with forming the horn into its general form or contour but simply operated to smooth the surface and take out any wrinkles.

A. On small horns spun from one piece of metal the spinning tool and spinning chuck had everything to do with the shape and the contour of the horn, as the horn was given its shape by such a process, but in the instance of the large horns such as we termed our full-spun, flaring bell, concert type, etc., these horns were made in the manner I have described and the spinning tool was used merely to take out the wrinkles, harden the metal and smooth it up. I am doing this type of work every day in my present factory, but not for phonograph uses.

XQ. 122. Do I understand you to testify that horns made entirely of aluminum were regularly sold by your firm or your company prior to 1901?

A. They were.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 123. Under what names or trade designations were these all-aluminum horns sold by you prior to 1901?

A. Aluminum horns, exhibition horns, special horns.

XQ. 124. In what different ways were your all-aluminum horns made prior to 1901?

A. We used about every method known or that we knew as applied to the art from a mechanical standpoint. They were made out of sections with longitudinal seams. Others were made with what we termed a top portion of sections with longitudinal seams to which we reamed a bell. Others were made as closely as possible in imitation of the Kaiser horn. Others were made of a combination of tin and aluminum.

XQ. 125. How did you make up the aluminum horns that you say were made as closely as possible in imitation of the Kaiser horn?

A. These horns were made sectional with tapered strips, wide at one end and narrow at the other, with longitudinal seams. At the smaller [478] end we fastened a tube of aluminum and sometimes of brass, this tube being spun of one piece of metal. To other types of aluminum horns we attached elbows of tin, white metal, die castings, etc.

XQ. 126. When was it that you made aluminum horns in imitation of the Kaiser horn?

A. About 1900, possibly the latter part of 1898.

XQ. 127. To whom did you sell these aluminum horns made in imitation of the Kaiser horn?

(Deposition of Ellsworth A. Hawthorne.)

A. We did not make very many because they were of expensive type. We produced a number for use with the Graphophone Grand in the year 1900 and tried to introduce them to our trade but they objected to the price. I am positive we sold some of this type of horn to the American Graphophone Co. in 1900; also to the Eastern Talking Machine Co., 176 Tremont St., Boston, Mass., Pardee, Ellenberger & Co., of New Haven, etc.

XQ. 128. How many of these aluminum horns made in imitation of the Kaiser horn did you actually sell?

A. Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co. manufactured a very large number of aluminum horns of all types. It would be impossible for me to answer your question correctly. I do not know.

XQ. 129. Is it not a fact that the aluminum horns you made for the Graphophone Grand were spun out of a single piece of metal?

A. They undoubtedly used some horns of that type but they were very small. The Graphophone Grand, on account of its mechanical construction and the fact that it was the loudest talking machine ever invented, necessarily required a large horn as I have previously testified that the reproduction from a talking machine in quality, strength of tone, etc., is one due to dimensions of the horn. Hence we always advocated horns from 42 inches in length up to 72 inches in length for use with the Graphophone Grand.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 130. How long did your company continue to make and put upon the market aluminum horns spun from a single piece of metal? [479]

A. But a short period. The horn was too small; it was not popular; the trade wanted large horns. Large horns cannot be spun out of a single piece of metal. I will qualify this by stating that probably they could be but it would require special machinery, special tools and a special man built on gigantic proportions to do the spinning.

XQ. 131. Did you experience any difficulty in making your small aluminum horns spun from a single piece of metal?

A. No particular difficulty in producing the small horn a few inches in length.

XQ. 132. Over what period of time did your firm or your company make up horns the bells of which were spun aluminum?

A. Hawthorne & Sheble made them until the concern was merged into the Hawthorne & Sheble Mfg. Co.; and the Hawthorne & Sheble Mfg. Co. continued to make them up to the time they discontinued business, in 1909, according to demand.

XQ. 133. Your all-spun brass horns as illustrated in your catalogue offered in evidence this morning, were, when finished, substantially, a single piece of metal of smooth contour, were they not?

A. They had that appearance. The horns were what we termed "cut-down" on a polishing head, the action of which was to smooth over the rough parts and give the article the appearance of one

(Deposition of Ellsworth A. Hawthorne.)

piece of metal. This was done by hand in our polishing department.

XQ. 134. Have you now fully described all of the steps that you say constituted the process of making the all-spun or full-spun brass horns that you say your company made up out of sections of brass?

A. With possibly the exception of stating that the flare of the horn was governed largely by the skill of the workman. This was hand work and was done with a ballpeen hammer. The horns being flared by the use of this hammer in stretching the metal to the desired form by striking the metal a sufficient number of blows to stretch it to, the flaring shape required after which the sections were brazed together in the manner previously described. [480]

XQ. 135. Do you wish to add anything further in order to give a complete description of the full process of forming the finished all-spun or full-spun brass horn?

A. I believe I have covered the process fully with the possible exception of minor details such as the workman marking out the brass with a templet pattern, cutting with snips or shears and the ordinary operations of a workman in making such a horn. The larger horns were annealed and then restretched by the hammering process. It is a number of years since I have watched these operations and possibly some slight details may have escaped.

XQ. 136. After the sections were formed and brazed together and the horn thus formed were any other steps taken in the finishing of the horn than

(Deposition of Ellsworth A. Hawthorne.)

those you have already described, and if so what?

A. The bells were strengthened by having wires placed in them. I do not recollect any other details.

XQ. 137. And where were the wires placed, that you have just referred to?

A. It is customary in almost all horns to wire the bells. By this I mean that possibly a quarter or one half inch of the metal was turned over and many instances of wire inserted underneath the turned-over portions of the metal and along the edge.

XQ. 138. In the manufacture of your all-spun brass horns at what stage of the process were the edges of the bell turned over upon the wire reinforcement, and how was this done?

A. After the horn was completed. The wires are inserted in the horns by a small pair of wheels that are revolved by hand, the operator holding the horn perpendicular and resting the horn on the shoulder. As they revolve the horns they feed the wire. This can be done on circular horns or on horns irregular in shape. The same method is employed, generally, throughout the metal manufacturing trade for the purpose of making household utensils, etc.

XQ. 139. When did your company take up the manufacture and sale of [481] the B. & G. horn?

A. In the latter part of 1898, 1899, etc.

XQ. 140. In what pages of the catalogue offered in evidence this morning are the B. & G. horns described or illustrated?

A. The B. & G. means black and gold and had reference to horns that were made with enameled bodies

(Deposition of Ellsworth A. Hawthorne.)

or ordinary Japan bodies. Such horns have been made and sold for general use since the latter part of 1898. There are no horns of that particular type illustrated in our catalogue and that is accounted for by the fact that the Tea Tray Co. of Newark, New Jersey, who were the competitors of the Hawthorne & Sheble Mfg. Co. and also of Hawthorne & Sheble, made particular efforts to compete against our particular concern with B. & G. horns. We endeavored to ignore that competition because we preferred to sell the higher priced horns, but we made the B. & G. because some of our customers demanded that type, and in later publications we were forced to offer the B. & G. horn. Eventually the B. & G. horn practically superseded all-spun, all-brass and all-aluminum horns, mainly because they cost a great deal less money. The top of the B. & G. horn was made of steel and cut the cost of manufacture of the horns from 25 to 40%.

XQ. 141. Please read Mr. Frank H. Stewart's answer to Q. 14, relative to aluminum horns made in segments by your company, and state whether you agree with this description of the process referred to.

By Mr. HICKS.—Objected to as not proper cross-examination.

A. The answer in the main is correct with the exception that the first aluminum horns that we manufactured were made almost entirely by hand processes.

XQ. 142. Isn't it a fact that the only horn containing aluminum, that your company sold prior to 1901,

(Deposition of Ellsworth A. Hawthorne.)

in any substantial quantity, was the type of horn that was provided with an aluminum spun bell that was fastened to a tin body? [482]

A. No. We sold all types of aluminum horns and made a specialty of all-aluminum horns. We at no time did what I would call a large business in aluminum horns. They were expensive and very easily damaged. Our customers would buy samples, possibly order a few, and then become discouraged on account of the troubles mentioned.

XQ. 143. You did make and sell aluminum horns with spun bells, did you not, prior to 1901?

A. We did.

XQ. 144. How were these horns constructed?

A. Some with aluminum bodies with longitudinal seams; some constructed entirely of aluminum with longitudinal seams provided with a smaller end spun from aluminum or brass; some with aluminum bodies with brass bells; others with tin bodies and aluminum bells; others of all aluminum, to the smaller end of which we attached connections to the phonographs, tapering throughout the entire length.

XQ. 145. I call your attention to the description of aluminum horns found at the top of p. 40 of your catalogue in evidence, which reads as follows:

“Aluminum horns. Very brilliant in tone, attractive in appearance. The horns are handsomely polished, with spun bells, very light in weight, and formed without the use of solder. The 18-inch horn can be used without a supporting stand.

(Deposition of Ellsworth A. Hawthorne.)

18-inch, with flaring bell, \$5.00

30-inch, with flaring bell, \$7.50

36-inch with bell 19½ inch.,

Special Exhibition Horn, 15.00''

Limiting yourself to the horns referred to in that description please state how those horns were constructed and how the spun bell was formed on or attached to said horns.

A. The catalogue states that the horns were provided with spun bell; however this catalogue was, I believe, about the first we ever issued. The horns described in the catalogue were made with the body portion cut from sections of metal, tapering, and were fastened together with longitudinal seams. The bells were spun and what we termed reamed to the horn. Horns of which we have sold the largest number are not even mentioned in this catalogue. It may be possible [483] that the special exhibition horn had reference to the aluminum horn I have previously described.

XQ. 146. Please state whether the quoted portion of p. 40 is the only portion of your catalogue, offered in evidence, that describes aluminum horns.

A. I do not notice them mentioned in the catalogue elsewhere except in the index, and also on p. 46, mentioned is made of several different types of horns all aluminum, aluminum and tin, etc. Special mention is made of an aluminum horn for reproduction, special for exhibition purposes.

XQ. 147. I call your attention to the testimony of Mr. Stewart at XQ. 162 reading as follows:

(Deposition of Ellsworth A. Hawthorne.)

XQ. 162. These glass horns as well as the B. & G. horns, were superseded by the type of horn as the flower horn, were they not?

“Practically so, that is, as the style changed the goods we manufactured changed.”

Please state whether you agree with Mr. Stewart’s answer to that question.

By Mr. HICKS.—Objected to as improper cross-examination.

A. The flower horn became popular about 1905–1906 and on. This was not due, however, to the superior reproducing qualities of the horn. Its popularity was undoubtedly due to the variety of finish that could be given to the horn, imitations made, the blending of paints and enamel. Moreover, it was a cheap horn to construct and could be made of cheap material. From selling horns at \$35.00 each on the advent of the flower horn they dropped as low \$.50 each.

XQ. 148. And it is a fact, is it not, that in 1905 or 1906 or thereabouts the so-called flower horn superseded the so-called B. & G. horn that you had previously been selling in large quantities?

A. Hawthorne & Sheble, for domestic uses and F. M. Prescott, for export trade, introduced the flower horn with scalloped edges in 1899. We decorated it and pushed the horns strenuously. Those [484] flower horns, however, were made of glass and were expensive to manufacture, easily broken, and it was not until the flower horn made of metal in imitation of the glass horn appeared and due to

(Deposition of Ellsworth A. Hawthorne.)

its cheapness, different features of decoration and less liability of damage that the flower horn business took an impetus. The cheap metal flower horn superseded the glass horn for the reasons given.

XQ. 149. I call your attention to the testimony of Mr. Stewart to the following, "XQ. 163. The glass and the B. & G. brass horn were of practically the same general contour, were they not?

A. They were."

Do you agree with Mr. Stewart?

By Mr. HICKS.—Same objection.

A. The circular printed by Hawthorne & Sheble Mfg. Co. in 1900 indicates the appearance of the flower horn and in the main Mr. Stewart is correct because he undoubtedly had in mind several other types of glass horns that we sold as shown in the circular. We did make and we did sell a glass horn with scalloped edges, decorated in imitation of a flower, in 1899, 1900, as shown in the circular.

XQ. 150. Referring to the circular of glass horns offered in evidence by the defendant, please state in whose handwriting are the words "morning-glory flower horn," "flower," exhibit "A," "E. A. Hawthorne," and "printed in 1900," appearing at different parts of the circular.

A. That is in my handwriting.

XQ. 151. Were those annotations made by you at or about the time you made your affidavit in this case, bearing date the third day of June, 1913?

A. Some time previous thereto.

XQ. 152. When did you make these annotations

(Deposition of Ellsworth A. Hawthorne.)

and under what circumstances?

A. I made the annotations when I came across the circular in regard to the glass horns of the flower type, with scalloped edges.

XQ. 153. And when was that?

A. I do not know the exact date.

XQ. 154. Was it this year? A. Yes. [485]

XQ. 155. And was it the same time you made the annotation on the margin of p. 33 of the catalogue you produced this morning and offered in evidence?

A. Previous thereto, I think, as I found the circular before I found the catalogue.

XQ. 156. When did you find the catalogue?

A. Some time in the early part of 1913.

XQ. 157. How long after you found the catalogue offered in evidence this morning did you make the annotation on p. 33?

A. It is dated June 3d, 1913, and I presume that is the date I made the annotation on p. 33.

XQ. 158. Did you have this catalogue in your possession at the time you made your affidavit for use on the motion for preliminary injunction in this case A. I did.

XQ. 159. Was the spinning tool used on the inside of the flaring mouth or bell of the spun-brass horns illustrated on p. 33 of your catalogue. A. No, sir.

XQ. 160. Do I understand that your impression is that the spinning tool was not used on the inside of the horn at all? A. No, sir, it was not.

XQ. 161. Referring to the fifty-six inch spun-brass exhibition horns with a narrow bell illustrated on

(Deposition of Ellsworth A. Hawthorne.)

p. 20 of the catalogue please state how those horns were constructed.

A. The method of construction was similar to the method of making an exhibitor's flaring bell horn, illustrated on the same page.

XQ. 162. And was the same method used in making these two horns as in making the horns described on p. 33?

A. Same methods, differing in a degree of dimensions, the narrow bell horn containing less metal as compared to the flaring bell horn and this applies to the larger horn illustrated on p. 33.

XQ. 163. Please state what are the bands that are shown surrounding the body of the horns on p. 20.
[486]

A. These bands were for finish and, in some instances, were where we connected the horns together.

XQ. 164. What do you mean by the last statement "where we connected the horns together"?

A. On the larger types of horn we had to braze the horns of more sections of metal than the smaller type; and on the exhibitors' horns we made the distinction of *putting the* band to give it appearance as compared with fifty-six inch horn of similar construction, shown on p. 33, on which will note there are no bands on any of the horns. You will notice on p. 21 a photograph of the fifty-six inch flaring bell horn which is supplied with a very slight band.

XQ. 165. Do I understand that in some cases you made up your large brass horns by forming a conical section that tapered down to the small end of the

(Deposition of Ellsworth A. Hawthorne.)

horn and forming a second section in the form of a truncated cone for the bell end of the horn and then brazing these two sections together, in some instances placing a band around the seam formed where the two sections were joined?

A. On some of the larger types of horns we adopted this method. The bell was formed of strips of metal tapered and curved and brazed together and then we would braze that portion to other portions of the horn. This method was employed, however, for only the largest types on account of the width of the metal and the difficulty of obtaining metal wide enough to cut single strips large enough to obtain the dimensions. Horns of lesser degree were made of several sections tapered throughout and brazed together.

XQ. 166. Did you always supply bands to cover the circular juncture of the body portion or the bell portion of the all-brass horns made in accordance with the method referred to in the last question?

A. The horns illustrated on p. 33 are termed spun-brass horns; and the illustration speaks for itself. The majority of these types of construction were sold without bands and it was only in instances where very large horns were made that we supplied the bands. [487]

XQ. 167. Do I understand then that in some cases where you made up your spun-brass horn by brazing together two conical sections you did not use a band to surround the circular juncture of the sections?

A. I have already stated that a majority of the

(Deposition of Ellsworth A. Hawthorne.)

horns of that type of construction were without bands.

XQ. 168. And is it not a fact that the majority of your spun-brass horns of thirty inches and upwards were made of this construction, namely, two conical sections brazed together? A. No.

XQ. 169. In what sizes was this construction followed?

A. I have previously stated we applied this method of construction to the largest types, only, fifty-six inches and above.

XQ. 170. Are you familiar with the method followed by your company in making the flower horns of metal from 1905 on? I refer to the so-called flower horns illustrated on the right-hand side at the center of p. 8 of the *Talking Machine World* of Jan. 15, 1905. A. Yes.

XQ. 171. Please state how those horns were made and assembled.

A. In the initial stages they were constructed entirely by hand, that is to say, hand tools, that is to say, tinsmith's hand tools were used. The strips of metal were cut by being first scored by aid of a pattern or templet, the sections cut with the tinsmith's shears or snips; the edges were broken or turned over by means of a mallet and a form; the seams constructed in the same manner. The first horns that I recollect were circular and were wired in the manner I previously described. Later, in 1904, we endeavored to obtain a patent for our machine for making longitudinal seams with a power-groover; but we

(Deposition of Ellsworth A. Hawthorne.)

were not successful. As the change in style from other types of horns to the flower horns grew we changed our methods and cut the leaves for the horn with blanking dies, turned over the edges by the power machine device of our own construction and made the tinsmith's seam in the horn with a curved longitudinal groover. We practically eliminated hand labor. [488]

XQ. 172. Did you have occasion to become familiar with the form of the sections that were used in making up your scalloped flower horn in 1905 and succeeding years? A. I did.

XQ. 173. Please describe the shape of the sections used in your flower horn from 1905 on.

A. The first flower horns that we manufactured, as I recollect the shape, were constructed of sections wide at one end and tapering to the other end, at the smaller end being fastened to a tin tube which was reamed or fastened with a bead to the larger portion of the horn.

RECESS.

XQ. 174. In the early part of 1905 your company widely advertised the flower horn, did it not, as it appears in the advertisement, a copy of which is in evidence, taken from the Talking Machine World of the fifteenth of January, 1905?

A. We advertised the flower horn in the early part of 1904, as we made them at that time. We advertised the flower extensively from 1898 and 1899 forward. The flower horns with scalloped edges were of the glass type. These were decorated by

(Deposition of Ellsworth A. Hawthorne.)

hand with fancy decorations same as the cheaper flower horn made of metal. Our flower horn was constructed along the line of our own ideas. I understand the patent at issue covers a type of flower horn with raised ribs, which I consider an impractical method of making a metal horn. We sold large quantities of flower horns of the cheaper metal variety all through 1904.

By Mr. DUNCAN.—Answer objected to as unresponsive and volunteered.

XQ. 175. Is it not a fact that commencing with the early part of 1905 your company widely advertised the flower horn that appears in the advertisement of the Talking Machine World of January 15, 1905?

A. Yes.

XQ. 176. You took considerable space, did you not, in the Talking Machine World during the early part of 1905 in advertising the [489] flower horn that is illustrated in the advertisement in evidence of January 15, 1905?

A. We were large advertisers and took considerable space in the publication referred to from the date of its first issue. Possibly you will find our advertisement of the flower horn in the first issue of that paper.

XQ. 177. I show you certified photographic copies of p. 4 of the Talking Machine World of February 15, 1905, p. 7, of the same publication issue of March 15, 1905, and p. 18 of the same publication, issue of January 15, 1905 and ask you whether the pages in question do not show advertisements or illustrations

(Deposition of Ellsworth A. Hawthorne.)

and descriptive matter correctly illustrating and describing the flower horn then being made and offered for sale by your company.

By Mr. HICKS.—The subject matters of the articles shown to the witness are objected to as hearsay and secondary evidence, especially, the article in the Talking Machine World for January 15, 1905, p. 18.

A. The article referred to in the Talking Machine World of January 15th, 1905, is not an advertisement of Hawthorne & Sheble Mfg. Co. at least, it was not what we termed paid advertisement. It was a "write up" which was probably published by the editor as an expression of goodwill towards the corporation.

The reproductions of the half-page advertisement, similar in character, that appear in the issues of February, 15th, 1905, and March 15th, 1915, appear to be reproductions of advertisements of the Hawthorne & Sheble Mfg. Co.

Complainant's counsel asks that the photographic copies shown the witness be marked for identification as "Complainant's Exhibits for Identification, p. 18, Talking Machine World of January 15, 1905, p. 4 of February 15, 1905 and p. 7 of March 15, 1905."

XQ. 178. Please state, if you can, when you first made a metal talking horn with scalloped edges and with ribbed seams like that illustrated in the advertisement, "Defendant's Exhibit, p. 8 of the Talking Machine World of January 15, 1905." [490]

(Deposition of Ellsworth A. Hawthorne.)

A. The scalloped edged metal flower horn was first made by Hawthorne & Sheble Mfg. Co., probably in the latter part of 1903, but positively in the early part of 1904.

XQ. 179. How do you fix that date?

A. By letters and otherwise.

XQ. 180. Did you give any information to the editor of the Talking Machine World upon which the article appearing in the issue of January 15, 1905, p. 18, was based?

A. I do not think I did. It is customary with the editors of paid publications to create a friendly feeling with their advertisers by obtaining copies of their literature and writing articles along the lines of their business. I am now engaged in a *line which* several articles have appeared recently in regard to my company, that I did not know were to be published until I read them, and this probably applies in this instance.

XQ. 181. How long a horn is it feasible to spin in brass out of a single piece?

A. It is not feasible to spin horns of much greater than eighteen or twenty or twenty-four inches. Spinning machines are not made for articles spun of greater depth than I have mentioned.

XQ. 182. Have you made any horns of brass or other metal by drawing?

A. I have made portions of horns.

XQ. 183. What portions and what style of horns have you made by drawing?

A. Reamed-on bells. It is not practical to draw

(Deposition of Ellsworth A. Hawthorne.)

articles of great depth. Twelve inches deep is considered quite a long draw, but they have special presses that draw fire extinguishers or similar devices 18 or 20 inches or 24 inches in length.

XQ. 184. What is the deepest bell that you have drawn on your presses? A. Six inches.

XQ. 185. Referring to the narrow bell horn illustrated on p. 20 of your catalogue put in evidence this morning, please state just how the curled edges of the bell were turned back over the wire which [491] you think was used for reinforcing purposes.

A. This was probably put on the bell by turning over the metal with a small device consisting of two wheels and the wire inserted by the workman while holding the horn resting against his shoulder. There may have been no wire in this particular horn; we made them with and without.

XQ. 186. By what tools was the inside of the bell of this horn smoothed or finished?

A. Ground on an emery-wheel on a polishing lathe, smoothed with a special revolving wheel on a polishing lathe, and colored with a rag wheel on a similar type of machine.

XQ. 187. And how was the final impression of the bell of this horn given the shape shown in the illustration on p. 20?

A. The metal was, in the first instance, in the flat. The pattern was laid on the metal and the metal scored by the workman. It was then cut by hand by tinsmith's shears or snips, the flaring portion to be was wide; the smaller end to be was narrow. These

(Deposition of Ellsworth A. Hawthorne.)

parts were operated on by the workman with a ball-peen hammer. He formed the flare and taper of the horn by hammering and stretching the metal into the desired shape. After the necessary sections of metal were so treated, they were brazed together.

XQ. 188. Have you clearly in mind the shape of the several sections that you say were used in making up this horn? A. Fairly so.

XQ. 189. Will you please draw on a sheet of paper that I now hand you an outline of the sections that you say were used in making up this horn?

A. I have made two sketches. Sketch marked by me No. 1 indicates the first process of cutting the metal strip. Section No. 2 indicates the same strip after it has been trimmed by the workman and hammered over the mandrel so as to give it the flare shape and taper. I am not a draftsman and my sketches are crude, but they convey the idea. [492]

XQ. 190. Please mark these sketches for purposes of identification with your name, date, and the words "sketches illustrating sections of brass horn."

A. I have done so.

XQ. 191. Referring now to the metal scalloped edge horn illustrated on p. 8 of the *Talking Machine World* of January 15, 1905, please describe, as exactly as you can, the shape of the sections used in assembling said horn.

A. These sections are wide at the one end and taper gradually to the narrow end. To secure the scallop effect the larger end is cut in a segment of a circle.

These sections are fastened together by first turn-

(Deposition of Ellsworth A. Hawthorne.)

ing over the metal edge of each section each side and making a lock seam or what is known as tinsmith's seam with a power groover. The smaller end of the horn is a tin section, similar to a small funnel with a longitudinal rib, which can be either soldered or reamed to the body portion of the horn. Horns of this type are cheap in construction and can be sold at very low prices. Care has to be exercised to see that the seams are tight; otherwise the horn is likely to develop a rattle. It is worth about 5 or 6¢ a horn to construct them in the fashion shown outside of the cost of metal.

XQ. 192. In what manner are the several sections held together or in position relative to each other in the process of being assembled in the finished horn?

A. The sections have one side turned over and on one side of the section; the other side is turned over on the other side. A workman fastens the two together by simply inserting one edge of the metal into the other edge or bead. They are then placed in a grooving machine and the seams flattened down. When being passed through the edging machine by the workman turning over the metal on one side in one direction and the metal on the other side in the other direction it causes the sheet to assume the proper form for assembling. [493]

XQ. 193. Will you please draw on the sheet of paper I now hand you an outline of the form of the sections used in making up the scalloped horn illustrated in your advertisement of January 15, 1905, making the same for purposes of identification with

(Deposition of Ellsworth A. Hawthorne.)

your name, date and the words "sketch of section of scalloped metal flower horn"?

A. I have made the sketch requested, and have marked it as you have asked.

XQ. 194. Am I correct in understanding that your company has made this scalloped metal flower horn in large quantities since you commenced its manufacture in say, 1904, or thereabouts?

A. The Hawthorne & Sheble Mfg. Co. made large numbers of flower horns with scalloped edges probably from the latter part of 1903 on, but certainly from the early part of 1904, and they made aluminum horns practically of the flower type in 1898 and 1899.

XQ. 195. Is it not a fact that for a number of years the Hawthorne & Sheble Mfg. Co. furnished the Columbia Phonograph Co. or the American Graphophone Co. with its entire supply of scalloped metal flower horns of the construction illustrated in your advertisement of January 15, 1905?

A. We sold them large numbers of all types of horns. I do not believe we sold them all they purchased.

XQ. 196. For a number of years you supplied large numbers of scalloped metal flower horns of the construction illustrated in your advertisement of January 15, 1905, on p. 8, of the Talking Machine World to the Columbia Phonograph Co. or the American Graphophone Co.? A. Yes.

XQ. 197. And have you not also supplied these horns to the Victor Talking Machine Co., and the Edison Phonograph Co.? A. No.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 198. Has your present company, the Hawthorne Mfg. Co., made and sold scalloped metal flower horns like those illustrated in the advertisement of January 15, 1905? [494]

A. Not enough to keep a horn organization together. They have purchased a few, I believe, mostly for export. I am not aware whether they even illustrated the flower horn at the present time in their domestic catalogue. By "they" I refer to the Columbia Phonograph Company. I understand the other talking machine companies are advertising they do not supply horns at the present time. The trend seems to be entirely for the so-called hornless type of machine.

XQ. 199. My question, however, was whether your present company has made and sold scalloped metal flower horns like those illustrated in the advertisement in question. Please state what the fact is in this regard.

A. We have supplied metal flower horns with scalloped edges in limited quantities to the Columbia Phono. Co. They are our only customers. We have never issued any literature whatever in regard to horns for photographs of any type nor have we solicited that kind of trade. Whatever horns we have made for the Columbia Phonograph Co. have been largely a matter of accommodation.

XQ. 200. Please state whether the horn I now show you was one that was made by the Hawthorne & Sheble Mfg. Co. or the firm of Hawthorne & Sheble.

By. Mr. HICKS.—Objected to as immaterial.

(Deposition of Ellsworth A. Hawthorne.)

A. This horn is similar to a type of aluminum bell and tin body horn that Hawthorne & Sheble and the Hawthorne & Sheble Mfg. Co. manufactured, but I am not able to state positively that it is the identical horn made by either concern; and similar horns were made by the Tea Tray Co., of Newark, New Jersey.

XQ. 201. This horn that I show you, however, is so similar to the tin and aluminum horns that were made by the Hawthorne & Sheble Mfg. Co., and by Hawthorne & Sheble, that you cannot state that it was not made by that concern? A. No.

XQ. 202. The aluminum bell with which this horn is provided is spun, [495] is it not?

A. It appears to be.

Complainant's counsel asks that the horn be marked for identification as "Complainant's Exhibit for Identification, Hawthorne & Sheble Tin and Aluminum Horn."

XQ. 203. Is the horn that I now show you one of the Kaiser horns that you say was on the market some time in 1898 or thereabouts?

A. It appears to be. And I should say that it was.

Complainant's counsel asks that the horn in question be marked for identification as "Complainant's Exhibit, Fiber Horn."

XQ. 204. After this Kaiser horn appeared on the market, did your firm or your company make a horn in imitation of it in fiber or paper?

A. We made one in imitation of the Kaiser horn, but larger and with more flare and of papier-maché. We also made horns in imitation of metal, brass and aluminum.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 205. Have you previously described how you made the imitation Kaiser horn in brass?

A. I have.

XQ. 206 Please refer to your catalogue in evidence and point out any illustration therein that illustrates and describes the earliest concert horn of brass, that your firm or company made or sold.

A. There is a description of the full-spun brass horn on pp. 20, 21 and 33. The description on p. 33, which refers to the horns as "seamless," however, is incorrect; the horns had seams, but were brazed and constructed and finished in such a manner as to appear to eliminate seams.

XQ. 207. Does this catalogue illustrate or describe the 56-inch concert horn which you say you made for the firm of Hawthorne & Sheble out of brass or thereabouts? If so, please point to the illustration or description.

A. The illustration of spun-brass horns on p. 33 illustrates this type of horn; and on pages 20 and 21 illustrations are shown of full-spun brass horns.

XQ. 208. Do the illustrations on pp. 20 and 21 correctly illustrate [496] the 56-inch brass concert horn which you say you made for your firm in 1896?

A. Some of these horns were constructed as shown in the illustration and some without the band effect, which was largely for the purpose of relieving the appearance of the horn.

XQ. 209. Which of the illustrations in this catalogue show the shape or contour of the 56-inch concert horn which you say you made for your firm in 1896?

(Deposition of Ellsworth A. Hawthorne.)

A. Particularly in p. 21 as it is a photograph.

XQ. 210. Then, as I understand the photograph on p. 21 correctly represents the shape of the 56-inch brass concert horns that you say you made in 1896?

A. It does.

XQ. 211. Is it not a fact that the practice followed by Hawthorne & Sheble and the Hawthorne & Sheble Mfg. Co., in making and assembling its sectional horns was to take a rectangular, oblong piece of sheet metal and to cut it diagonally so as to form, in an economical manner, two tapering strips of metal which could be used in the manufacture of a horn by joining their edges together after inverting one of the two tapering strips and then assembling said strips with the other tapering strip so as to build up the horn?

A. The practice of taking a rectangular piece of metal and cutting the strips of metal therefrom for the purpose of forming the horn has been practiced in horn constructions since 1893, to my knowledge. Hawthorne & Sheble did not practice this construction until after their horn factory was organized in the early part of 1898. Hawthorne & Sheble Mfg. Co. continued this practice after the formation of the corporation.

XQ. 212. I show you a rough sketch containing diagram 3 and diagram 4 and ask whether, assuming that diagram No. 3 represents an oblong rectangular piece of sheet metal, this diagram together with diagram No. 4 do not correctly illustrate the method followed by Hawthorne & Sheble and the Hawthorne

(Deposition of Ellsworth A. Hawthorne.)

& Sheble Mfg. Co. prior to 1900 in assembling horns out of sections of metal.

A. It represents types of horns that were formed out of sections [497] of metal such, for instance, as our "all-brass horn." Our "full-spun horn" so-called, was made of sections wide at one end and narrow at the other, trimmed with shears, tapering and curved.

XQ. 213. Did you make any aluminum or tin horns according to the method illustrated in diagrams 3 and 4?

A. We did and we also made aluminum and brass horns of tapered curved strips of metal, previously described by me.

XQ. 214. Please turn to your catalogue and point out in it any horns that were made of sections cut from oblong, rectangular pieces of metal in the manner illustrated, diagrams 3 and 4.

A. On p. 31 and p. 32 are types of horns such as you refer to.

XQ. 215. Which horns on p. 31 do you think were built up of sections in the manner of diagrams 3 and 4?

A. Ten-inch Japaned tin for Eagle graphophone; 14-inch Japaned tin. We cut these horns from sheets of tin with blanking dies just the same as in later years we cut the leaves for the flower horn with blanking dies. The process is identical.

XQ. 216. Of how many sections do you claim the ten-inch Japaned tin horn for the Eagle graphophone and of how many sections the 14-inch Japaned tin

(Deposition of Ellsworth A. Hawthorne.)

horn were made?

A. Each of one section in the body portion. We have made 14-inch brass horns with 2 sections; the purpose was to enable us to purchase the brass at lower cost as the wholesale price of brass was based on widths of material. Over certain widths of material the brass carries an extra and for this reason it was more economical to use the narrow strips of metal for the purpose of obtaining the sections.

XQ. 217. Which of the horns illustrated on p. 32 do you think were made up of sections formed and joined in the manner set forth in diagram 3 and 4 above referred to?

A. Possibly all of them. The silveroid horn was a zinc horn and [498] zinc does not carry an extra on account of width so that it is quite likely that we cut these horns by reversing the pattern. We, of course, did not make blanking dies for such large horns as that would be impossible.

XQ. 219. Of how many tapering sections is it your belief that the silveroid horns illustrated on p. 32 of your catalogue were made up?

A. For the reasons already given, probably, one section. Some of the larger may have been made of several sections.

XQ. 220. The sketch marked diagram 3 and diagram 4 is a correct reproduction, is it not, of a sketch marked in your handwriting diagram No. 3 and diagram No. 4, constituting part of your affidavit of June 3, is it not? A. Yes.

XQ. 221. In the affidavit you make the following

(Deposition of Ellsworth A. Hawthorne.)

descriptive statement of this sketch, do you not?

“Diagram No. 3 shows a rectangular, oblong piece of sheet metal cut diagonally, so as to form, in an economical manner, two tapering strips of metal which can be used in the manufacture of a horn by joining their edges together after inverting one of the tapering strips and assembling it with other tapering strips in the manner shown in diagram No. 4, according to the method employed by said firm of Hawthorne & Sheble prior to the year 1900.”

A. Yes.

XQ. 222. And this statement is correct, is it?

A. It is.

Complainant's counsel asks that the diagrams shown the witness in connection with XQ. 212, and following questions be marked for identification as “Complainant's Exhibit, for Identification, Diagram of Hawthorne & Sheble, Sections and Process of Assembling.”

XQ. 223. And was this method of cutting the sections and assembling the same into horns followed by the Hawthorne & Sheble Mfg. Co., when it succeeded the firm of Hawthorne & Sheble?

A. We followed this method for certain types of horn and for other types we cut the sections by hand where a tapering, curved section was desired. For the tapering sections similar to that shown in the diagram we cut them with shears.

XQ. 224. For purposes of identification will you please put your [499] name, and the date, Sept.

(Deposition of Ellsworth A. Hawthorne.)

30, 1913, on the sketch marked diagrams 3 and 4, above referred to? A. I have done so.

By Mr. HICKS.—If complainant's counsel desire to use the sketch just marked by the witness and which has been taken from the affidavit of the witness he should use the entire sketch consisting of diagrams numbered 1, 2, 3 and 4, since the omission of diagram numbered 1 and 2 makes the rest of the sketch misleading.

XQ. 225. Is it your claim that the horns illustrated in diagrams Nos. 1 and 2 of the sketch annexed to your affidavit of June 3d, 1913, were made in accordance with the method illustrated in diagrams 3 and 4 attached to your affidavit?

A. Diagram No. 1 and No. 2 represents horns that were constructed out of strips of metal cut by hand and tapering and curved, these sections being brazed together in the form that I have previously described. Diagrams No. 3 and 4 indicates the method of making horns out of one or more sections, similar to the horns illustrated on p. 32 of the Hawthorne & Sheble catalogue.

XQ. 226. Referring to your catalogue in evidence please point out any horns there illustrated or described, that are made up of a number of sections of metal cut and joined in the manner illustrated in diagrams 3 and 4, and described in that portion of your affidavit quoted in connection with XQ. 221.

A. On pp. 31 and 32 such horns are illustrated.

XQ. 227. And yet, as I understand, you say that certainly in most instances the horns illustrated on

(Deposition of Ellsworth A. Hawthorne.)

these pages were made, as far as the body is concerned, of one piece of metal. Is that correct?

A. I did not say so. I said the small horns were made of one piece of metal; the larger horns of two or more.

XQ. 228. What, according to your belief, was the largest number of sections used in the body of any one of the horns illustrated on pp. 31 and 32?

A. I have made horns 26 inches in length of brass, formed of at least 2 sections of metal. This horn is illustrated on p. 31. They [500] were made of two sections on account of the extra cost of the wide brass and had longitudinal seams throughout their entire length. The 56 inch Japaned tin horn I have made of at least 3 and, I believe, more sections of metal. For the reasons previously given, the silveroid horns may or may not have been made of more than one sections of metal with longitudinal seams.

XQ. 229. How were the flaring bells made in the bodies of the horns illustrated on pp. 31 and 32?

A. Some were soldered; some were reamed or beaded.

XQ. 230. Is it not a fact that your company made brass horns composed of a truncated cone of spun brass constituting the bell end of the horn and a conical section of spun brass constituting the small end of the horn, each of which sections was spun or drawn out from a single sheet of metal, the two sections being brazed together to form the complete horn?

A. We have made such horns, but they were very large horns.

Cross-examination closed.

(Deposition of Ellsworth A. Hawthorne.)

Redirect Examination by Mr. HICKS.

RDQ. 231. Is this a complete copy of diagram Nos. 1, 2, 3 and 4, annexed to your affidavit?

A. It is.

By Mr. HICKS.—The paper shown to the witness is offered in evidence and marked “Defendant’s Exhibit, diagrams No. 1, 2, 3 and 4, Annexed to the Affidavit of the Witness, Frank Z. Demarest, Examiner.”

RDQ. 232. Please refer to the letter of Matthew P. Doyle, dated Sept. 22, 1904, to the Hawthorne & Sheble Mfg. Co. and state whether at the time that that letter was received by you the Hawthorne & Sheble Mfg. Co. was manufacturing horns such as are described in the letter.

By Mr. DUNCAN.—Objected to as incompetent and leading.

A. They are.

RDQ. 233. Have you any other letter of about the same date, referring to the manufacture of such horns by the Hawthorne & Sheble Mfg. Co.?

By Mr. DUNCAN.—Same objection.

A. I have. A letter dated Sept. 26, 1904, and addressed to me c/o the [501] Hotel Cecil, Boston, Mass.

RDQ. 234. When did that letter come into your possession?

A. I probably received it in Boston, Sept. 27 or 28, 1904.

RDQ. 235. From whom did the letter come and how did you receive it?

(Deposition of Ellsworth A. Hawthorne.)

A. It was addressed to me by Mr. Horace Sheble, vice-president and treasurer of Hawthorne & Sheble Mfg. Co. and was received by me through the mail.

RDQ. 236. The letter mentions "our flower silk horns." What horns were those?

A. This was a horn of the familiar flower shape and covered with a bookbinder's cloth, which we advertised as silk-finish. It had the appearance of being covered with silk.

RDQ. 237. Please refer to the advertisement of Hawthorne & Sheble Mfg. Co. in the Talking Machine World for February 15, 1905, which was exhibited to you on cross-examination, and state what are the "silk-finish" horns mentioned in that advertisement.

A. It is the silk-finish horn of flower type referred to in Mr. Sheble's letter to me, of September 26, 1904. We had a patent issued to the Hawthorne & Sheble Mfg. Co. covering this novel method of putting a silk finish on a horn.

RDQ. 238. Mr. Sheble's letter of Sept. 26, 1904, does not appear to be signed. Please explain this fact.

A. I presume Mr. Sheble overlooked signing the letter. There is financial information contained in the letter, however, that would prove unquestionably that it was dictated or written by Mr. Sheble.

RDQ. 239. Do you recall the circumstances referred to in the letter?

A. I have a recollection of the time the Tea Tray Co. cut the price on flower horns. It was about this period and referred to by Mr. Sheble.

(Deposition of Ellsworth A. Hawthorne.)

RDQ. 240. Do you know for how long a time the Tea Tray Company had been marketing the flower horns previous to Sept. 26, 1904?

By Mr. DUNCAN.—Objected to as incompetent.

A. Since the early part of 1904 and, I believe, the latter part [502] of 1903. Of this latter I am not positive.

By Mr. HICKS.—The letter is offered in evidence and marked “Defendant’s Exhibit, Letter of Horace Sheble to E. A. Hawthorne, of Sept. 26, 1904, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Objected to as insufficiently proven and as incompetent proof.

By Mr. HICKS.—In what respect does complainant’s counsel mean that the letter has been insufficiently proven? The objection is so indefinite that defendant’s counsel is unable to meet complainant’s counsel’s objection.

By Mr. DUNCAN.—The alleged letter is unsigned and the witness had been led by a series of questions to assume knowledge which manifestly is dependant upon the genuineness of the letter.

RDQ. 241. What has become of the books, papers and records of Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co.?

A. All the earlier records were destroyed by me in 1909. I have a few records in my possession, dated 1908 and 1909.

RDQ. 242. What has become of the goods, wares and merchandise of Hawthorne & Sheble and Haw-

(Deposition of Ellsworth A. Hawthorne.)

thorne & Sheble Mfg. Co., such as horns for phonographs etc.?

A. They were sold at public auction in Philadelphia several years ago.

RDQ. 243. Please look at U. S. Patent No. 491,421 of Feb. 7, 1893, to Gersdorff, Fig. 2 thereof, and state whether the instrument shown in Fig. 2 is or is not adapted for use as a horn for phonographs?

A. It is. I have seen phonograph horns constructed similar to figure 2 and I have seen phonograph horns constructed similar to figure 2 even including the perforated sheet. In fact I have made horns that way myself for some customers who had the idea that the perforated piece would take some of the blast out of the record, or clarify the tone.

RDQ. 244. How would the horn or funnel, such as is shown in said Fig. 2, compare with the ordinary type of flower horn with respect to the reproduction from a phonograph record? [503]

A. Dimension, for dimension, the results would be the same.

RDQ. 245. Please refer to "Defendant's Exhibit, Hawthorne & Sheble Fluted Horn" and state what was the sound-producing qualities of that horn?

A. There was no advantage in the fluted horn. The shape, contour of the horn, method of making, material made of, has little to do with the reproduction. This is governed, as I have previously testified, largely by the dimensions of the horn.

RDQ. 246. How often has the Talking Machine World been published?

(Deposition of Ellsworth A. Hawthorne.)

A. It is a monthly publication.

RDQ. 247. It appears that on Nov. 15, 1905, Vol. 1, No. 11 was issued? A. Yes.

RDQ. 248. Referring to the advertisement of Hawthorne & Sheble in the Talking Machine World of January 15, 1905, it would appear, then, would it not, that the issue of January 15, 1905, was the first issue of that publication?

A. I was largely responsible for the birth of the Talking Machine World and its first issue was of January, 1905.

RDQ. 249. Have you any of the horns made by Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co. in your possession at the present day, other than the fluted horn that has been offered in evidence?

A. I believe there are a few horns manufactured by Hawthorne & Sheble Mfg. Co., 14 inches in length, stored in a barn on our premises in Bridgeport. Other than these I do not know of any. These horns were made of tin, others were made of tin body with brass bell.

RDQ. 250. Have you, in your possession, any catalogue of Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co., published prior to April 14, 1904, other than the one which you have produced and which has been offered in evidence?

A. None of which I can positively assert in regard to the date.

RDQ. 251. Do you know where any of Hawthorne & Sheble or Hawthorne & Sheble Mfg. Co.'s horns or catalogues made or published prior [504] to April

(Deposition of Ellsworth A. Hawthorne.)

14, 1904, can be found, to-day, other than those which you have produced?

A. I do not. All their literature was destroyed by me when I closed the affairs of Hawthorne & Sheble Mfg. Co. several years ago.

Redirect examination closed.

Recross-examination by Mr. DUNCAN.

RXQ. 252. Did not your present company continue the manufacture of some articles previously made by the Hawthorne & Sheble Mfg. Co.?

A. The only articles have been a few horns for the Columbia Phonograph Company. We have not continued the manufacture of any other articles or devices made by the Hawthorne & Sheble Mfg. Co. Our present line is entirely different.

RXQ. 253. Have you any catalogue of the Hawthorne & Sheble Mfg. Co. other than that you have already produced and put in evidence, illustrating horns made by that company since the date of the catalogue already offered?

A. Yes. I here produce it.

RXQ. 254. This catalogue is marked No. 600, is it not, on the outside cover? A. It is.

RXQ. 255. Will you please mark the same for identification with your name and the present date?

A. I have done so.

RXQ. 256. Is it not a fact that the Hawthorne & Sheble Mfg. Co. made horns out of metal other than brass, composed of a truncated cone, spun or drawn, constituting the bell end of the horn, and a conical section spun or drawn, constituting the small end of

(Deposition of Ellsworth A. Hawthorne.)

the horn, each section being spun or drawn from a single sheet of metal and the two sections being joined to form the complete horn?

A. We may have done so.

RXQ. 257. This catalogue No. 600 was current during the early part of 1905, was it not?

A. I believe it was.

Recross-examination closed.

Re-redirect Examination by Mr. HICKS.

RRDQ. 258. According to your present recollection, how early was this [505] catalogue, No. 600, current among the trade?

By Mr. DUNCAN.—Objected to as incompetent and not calling for the best evidence.

A. I have tried my best to ascertain the correct date. I believe it was issued in the latter part of 1903; I feel sure it was issued in the early part of 1904.

By Mr. DUNCAN.—Answer objected to as incompetent and based on surmise.

By Mr. HICKS.—Inasmuch as the complainant's counsel required the witness to produce the catalogue and interrogated him in regard thereto, the catalogue is offered in evidence and marked "Defendant's Exhibit, Hawthorne & Sheble Mfg. Co.'s Catalogue No. 600, Frank Z. Demarest, Examiner."

Re-redirect examination closed.

Deposition closed.

Signature waived.

Sept. 30, 1913.

**[Deposition of William A. Lawrence, for
Defendant.]**

WILLIAM A. LAWRENCE, being duly sworn as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. William A. Lawrence; 47 East Orange, New Jersey; President of the Standard Metal Mfg. Co., manufacturing sheet metal goods.

Q. 2. Have you had any experience in the manufacture of horns for phonographs, and, if so, for how long?

A. We have been in that line of business for twelve years, commencing in the spring of 1902.

Q. 3. Please look at U. S. Patents No. 34,907 of Aug. 6, 1901, to McVeety & Ford (Design) and No. 699,928 of May 13, 1902, to McVeety & Ford and state whether you have made, in accordance with those two patents, any structure shown and described therein.

A. Yes, we made a horn as per patent numbers given, in possession of Mr. Hicks at the present time.

Q. 4. Referring to the structure made by you in accordance with the [506] McVeety & Ford Patents, you appear to have added to the small end thereof, a cone made of a single piece of metal. For what purpose or why did you add this small cone?

A. The foreman put it on by mistake, understanding it was to go on or to be attached.

(Deposition of William A. Lawrence.)

By Mr. HICKS.—The funnel produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Model of the Funnel or Ventilator Shown in the McVeety & Ford Patents, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—This exhibit is objected to on the ground that it incorrectly represents the disclosures of the patents in question and has been manifestly manufactured with certain additions, for the purposes of this case without respect to the patents upon which it is alleged to be based.

By Mr. HICKS.—As the model correctly represents the McVeety & Ford structure with the addition of the tin funnel at the small end, it seems unnecessary to mutilate the exhibit model by removing the small end from it.

Q. 5. Please refer to U. S. Patents Nos. 453,798 of June 9, 1891, to Gersdorff and No. 491,421 of Feb. 7, 1893, also to Gersdorff, and state whether you have made a model of the funnel shown and described in those two patents?

A. This is the one we made to correspond with Patent No. 491,421, and 453,798.

By Mr. HICKS.—The model produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Model of Funnel or Horn Shown in the Gersdorff U. S. Patents, made of Three Sections, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Objected to as not correctly representing the structure of the patents referred to.

Q. 6. In Gersdorff Patent No. 453,798, p. 1, lines

(Deposition of William A. Lawrence.)

30-32 and in Gersdorff Patent No. 491,421, p. 1, line 36, it is said that the funnel may consist of two, three or more sections. Have you made a funnel in accordance with those two Gersdorff Patents, consisting of more than two sections?

A. We have. I here produce it.

By Mr. HICKS.—The funnel or horn produced by the witness is [507] offered in evidence and marked “Defendant’s Exhibit Model of Funnel or Horn Shown in the Gersdorff U. S. Patents, Made of Eight Sections, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Same objection.

Q. 7. Have you made a model of a horn for phonographs, according to French Patent No. 318,742 of Feb. 17, 1902, to Turpin, according to Figs. 8, 9, 10, 11, 12, 13, 14, 15 and 16 thereof, and the description of those figures set forth in the translation of the specification of the Turpin French Patent?

A. We have. I here produce it.

Q. 8. Of what metal is the cone at the small end of the model made?

A. Made of sheet tin.

Q. 9. Of what material are the twelve ribs, which are riveted over the meeting edges of the twelve sections composing the horn, made?

A. Made of light-weight sheet tin cut in strips.

Q. 10. The horn appears to have two of its tapering sections made of the same light-weight tin, these tin sections being upon opposite sides of the horn. Of what material are the remaining ten sections of the horn made?

(Deposition of William A. Lawrence.)

A. Made of cardboard.

Q. 11. Why did you use cardboard instead of wood, the material described in the patent?

A. We used cardboard because it was more convenient to cut up and the patent reads it can be made of wood, glass, or metal. We substituted cardboard for the wood.

By Mr. HICKS.—The horn produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Model of Horn Made in Accordance with Fig. 14 and the Description of Turpin’s French Patent No. 318,742 of Feb. 17, 1902, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Objected to as not correctly representing the structure referred to in the patent.

Q. 12. Was any threat ever made against the Standard Metal Mfg. Co. under the Nielsen Patent No. 771,441 of October 4, 1904?

A. Yes, there was.

Q. 13. Please state when the threat was made, who made it and the circumstances connected therewith.

A. I think it was in the forepart of 1905 by Mr. Krabbe, calling on [508] myself, either at the factory or at 10 Warren St., here in the city of New York. He claimed to have bought or invented the horn, I have forgotten which, and stated that we must stop making horns at that time or he would sue us.

Q. 14. What type of horns did he refer to?

A. The flower shape, morning-glory horn.

Q. 15. Is Mr. Krabbe present now in this room?

A. Yes, sir.

(Deposition of William A. Lawrence.)

Q. 16. Is his full name Christian Krabbe?

A. I believe it is.

Q. 17. Did he say that he represented any company?

A. It is so long ago that I do not remember whether he did or not.

Q. 18. Did he mention the U. S. Horn Co.?

A. I don't remember that part of it.

Q. 19. When did your company begin to manufacture the so-called flower horn?

A. In the fall of 1904 or the spring of 1905.

Q. 20. Was any suit ever brought against your company on the said Nielsen Patent, No. 771,441?

A. I never heard of it.

Q. 21. With the exception of this suit, in which you are testifying, did you ever hear of any suit brought against anyone on the said Nielsen Patent, alleging infringement of the patent by the so-called flower horns?

By Mr. DUNCAN.—Objected to as immaterial.

A. I think I heard of one against a man by the name of Senne, I think it was.

Q. 22. Did you ever hear of any other?

By Mr. DUNCAN.—Same objection.

A. No.

Q. 23. Did you ever have any dealings with the Searchlight Horn Co., the complainant in this suit?

A. Yes.

By Mr. DUNCAN.—Objected to as irrelevant and immaterial and not within the issues raised by the pleadings.

(Deposition of William A. Lawrence.)

Q. 24. When? A. In the spring of 1908.

Q. 25. What was the result of those transactions between your company and the Searchlight Horn Co.?

[509]

By Mr. DUNCAN.—Objected to as calling for incompetent proof and conclusions and on the ground stated in the last objection.

By Mr. HICKS.—In view of the technical character of the objection the question is withdrawn.

Q. 26. Please state what was done under the negotiations between your company and the Searchlight Horn Co. in the spring of 1908?

By Mr. DUNCAN.—Same objection.

A. We made arrangements, that is, the Standard Metal Mfg. Co. with the Searchlight Horn Co., to take over their plant, machines or presses, tools and a portion of the stock to manufacture a folding horn on a profit-sharing basis.

By Mr. DUNCAN.—Answer objected to as incompetent and secondary unless it be shown that the arrangements referred to were oral and not in writing in which latter case the written agreement is the only competent proof.

By Mr. HICKS.—Plaintiff's counsel entirely misunderstands the nature of the present question which asks the witness to state the things done and not the contents of any agreement.

By Mr. DUNCAN.—Complainant's counsel fails to see how any of the transactions inquired about are within any of the issues of this case and until the bearing of these questions is made plain, feels it

(Deposition of William A. Lawrence.)

proper to interpose the usual objections to questions calling for transactions which are set forth in written documents or in other evidence of better nature than that of the testimony of the witness alone.

Q. 27. Did the Searchlight Horn Co. in the spring of 1898 turn over to you any horns for phonographs?

A. Yes, it did.

Q. 28. How many different kinds did the Searchlight Horn Co. turn over to your company?

By Mr. DUNCAN.—Objected to as irrelevant and immaterial.

A. Two.

Q. 29. Have you produced a sample of each kind of horn that the Searchlight Horn Co. turned over to your company in the spring of 1898?

A. Yes, I produce them in evidence. ,

Q. 30. One of them is a blue folding horn marked "Searchlight Horn, U. S. Pat. Oct. 4, 1904; January 30th, 1906. Searchlight Horn Co., Brooklyn, [510] N. Y." Was that label on this blue folding horn at the time this horn was turned over to your company by the Searchlight Horn Co. in the spring of 1908?

By Mr. DUNCAN.—Objected to on the ground stated to Q. 23.

A. It was.

Q. 31. October 4, 1904, is the date of the Nielsen Patent here in suit. Do you know to whom the patent was issued, the date of which was January, 1906.

By Mr. DUNCAN.—Same objection.

A. I do not.

By Mr. HICKS.—Defendant offers in evidence

(Deposition of William A. Lawrence.)

Reissue Patent, No. 12,442 of January 30, 1906, to Villy. The horn produced by the witness is offered in evidence and marked "Defendant's Exhibit, Searchlight Horn Co.'s Folding Horn put out under the Nielsen and Villy Reissue Patents, Frank Z. Demarest, Examiner."

By Mr. DUNCAN.—Objected to as irrelevant and immaterial and not within the issues of this case.

Q. 32. The other horn produced by you is also a blue horn and is composed of four corrugated sections and a small funnel at the small end of the horn. Did the Searchlight Horn Company, in the spring of 1908, have any other style of horn upon the market, to your knowledge other than the two horns that you have produced?

A. Not to my knowledge.

By Mr. DUNCAN.—Objected to as irrelevant and immaterial.

Q. 33. How many of these two styles of horns did the Searchlight Horn Company turn over to your company in the spring of 1908?

By Mr. DUNCAN.—Same objection.

A. I don't remember; I should judge somewhere around 100 or 150, all together, principally the folding horn.

By Mr. HICKS.—The second horn produced by the witness, if offered in evidence and marked "Defendant's Exhibit, Searchlight Horn Co.'s 4-strip Corrugated Horn, Frank Z. Demarest, Examiner."

By Mr. DUNCAN.—Same objection. [511]

Q. 34. Did your company manufacture any horns

(Deposition of William A. Lawrence.)

of either of these two types, turned over to you by the Searchlight Horn Co.?

By Mr. DUNCAN.—Same objection.

A. No.

Q. 35. Did your company sell any of the horns turned over to you by the Searchlight Horn Co. in the spring of 1908? A. A few.

Q. 36. What proportion?

By Mr. DUNCAN.—Same objection.

A. About twenty-five.

Q. 37. Have you constructed a horn in accordance with Q. 20-29 of the testimony of Frank H. Stewart, given in this suit?

A. I here produce a horn made by me in accordance with the said testimony of Mr. Stewart.

By Mr. HICKS.—The horn produced by the witness is offered in evidence and marked "Defendant's Exhibit, Model of Hawthorne & Sheble's Aluminum Horn made by Mr. Lawrence from the Testimony of Frank H. Stewart, Frank Z. Demarest, Examiner."

By Mr. DUNCAN.—The exhibit is objected to as not correctly representing the structure in the question referred to.

Adjourned to Thursday, Oct. 2, 1913, at 3:15 P. M. same place.

October 1, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

WILLIAM A. LAWRENCE resumes the stand.

Cross-examination by Mr. DUNCAN.

XQ. 38. How long have you been connected with

(Deposition of William A. Lawrence.)

the Standard Metal Co., and in what capacity?

A. Eleven years this spring; as president and treasurer of the company.

XQ. 39. Since your company began the manufacture of the so-called flower horn in the spring of 1905 or the fall of 1904 as stated by you in your answer to Q. 19 has your company manufactured and sold a large number of those horns?

A. Yes. [512]

XQ. 40. Have you manufactured and sold such horns for any of the large phonograph or talking-machine companies and if so, which?

A. Yes, we have to the Edison Phonograph Company, Victor Talking Machine Company and a few to the Columbia Co. and the U. S. Phonograph Co., Universal Talking Machine Co. and several smaller concerns.

XQ. 41. Did you know at the time you were asked to make the models that you hve produced and put in evidence that this suit was pending against the Pacific Phonograph Co. and Babson Bros.?

A. Yes, I did.

XQ. 42. Had you been told that the Searchlight Horn Co. was bringing this and possibly other suits under the Nielsen Patent No. 771,441? A. Yes.

XQ. 43. Do you wish to intimate from any of the testimony you gave on your direct examination in regard to transactions between your Co. and the Searchlight Horn Co. that the flower horns that you say you made for the Phonograph and Talking Machine Companies named in one of your recent

(Deposition of William A. Lawrence.)

answers were made under any license or with any permission from the Searchlight Horn Co.?

By Mr. HICKS.—Objected to as calling for a conclusion of law.

By COMPLAINANT'S COUNSEL.—This question is asked because the purpose or relevancy of the questions asked by complainant's counsel on this direct examination of this witness in regard to the transactions referred to is not apparent.

A. I know of no arrangement made or any license for manufacturing any of the horns in question.

XQ. 44. Did you have placed before you any explanations, suggestions, or instructions in connection with the manufacture of the models that you produced and put in evidence other than the patents that you referred to in connection with these models? And if so, who gave you any suggestions, instructions or explanations?

A. In addition to the papers which were the patents and translation of the French patent this letter was given to carry out the instructions, [513] dated Sept. 15th, 1913, written by Mr. Louis Hicks.

XQ. 45. Did you know, when you made these exhibits, that they were intended for use in a suit brought under the Nielsen Patent? A. Yes.

XQ. 46. How did you know what size to make the exhibits in question?

A. I followed the instructions of the letter.

2
No. 2759

United States
Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.

(IN THREE VOLUMES.)

COLUMBIA GRAPHOPHONE COMPANY, a
Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corpora-
tion,

Appellee.

VOLUME III.

(Pages 641 to 954, Inclusive.)

Upon Appeal from the United States District Court for the
Northern District of California, Second Division.

Filed

APR - 4 1918

No. 2759

United States
Circuit Court of Appeals

For the Ninth Circuit.

Transcript of Record.
(IN THREE VOLUMES.)

COLUMBIA GRAPHOPHONE COMPANY, a
Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corpora-
tion,

Appellee.

VOLUME III.
(Pages 641 to 954, Inclusive.)

Upon Appeal from the United States District Court for the
Northern District of California, Second Division.

(Deposition of William A. Lawrence.)

XQ. 47. Then how did you know what portions of the devices illustrated in any figure of any patents that were sent you you were to use and what portions to omit?

A. By taking it for granted that the desire was to show the construction of the parts in the various patent papers, and to show the contour and general construction of the article, leaving out unnecessary parts or labor for this purpose.

XQ. 48. Is it not a fact that in making these models you had in mind the desirability of making them, as far as possible, of sizes suitable for horn purposes and of leaving out parts that were unnecessary from the standpoint of phonograph horns?

A. Yes, it was.

XQ. 49. How did it happen that the model of the McVeety & Ford ventilator was provided with a tapering small end-piece similar to that used in phonograph horns?

A. In giving the foreman instructions **who was** the best fitted man to make these samples he understood there was to be an end-piece attached. My attention was called to it and as it was on I stated I did not think it made any difference and to leave it on.

XQ. 50. You were aware, were you not, when these models were made, that suits had been commenced under the Nielsen Patent against some of the phonograph companies for whom you had made the flower horns complained of or against distributors or dealers handling such horns for said companies?

A. Yes.

(Deposition of William A. Lawrence.)

XQ. 51. Was your company engaged in the manufacture of phonograph horns prior to the time it took up the flower horn in 1904 or 1905?

A. Yes. [514]

XQ. 52. Over how long a period had it been making phonograph horns prior to the commencement of the flower horn manufacture?

A. 2 to 3 years.

XQ. 53. Had your company been making and selling what was known on the market as the B. & G. horn? A. Yes.

XQ. 54. Is it not a fact that within a short time after you commenced the manufacture and sale of the flower horn it practically supplanted the B. & G. horn? A. Yes.

XQ. 55. The B. & G. horn to which you refer was made up of a conical body to which a flaring bell was soldered or otherwise fastened, was it not?

A. Yes.

XQ. 56. Is the illustration at the upper right hand corner of "Defendant's Exhibit, advertisement of Hawthorne & Sheble in the Talking Machine World for Jan. 15, 1905," a correct representation of the B. & G. horn to which you have referred as having at one time been made by you and practically supplanted by the so-called flower horn? A. It is.

XQ. 57. And is the illustration directly under the illustration of the B. & G. horn on the exhibit referred to a correct representation of the so-called flower horn that you say your company put on the market in the fall of 1904 or the early part of 1905 and that practically supplanted the B. & G. horn?

(Deposition of William A. Lawrence.)

A. It is.

XQ. 58. Did your company sell the B. & G. horn to phonograph or talking-machine companies in large numbers prior to your manufacture and sale of the flower horn? A. Yes.

XQ. 59. Did you sell the B. & G. horn to the same phonograph or talking-machine companies to which you subsequently sold the flower horn? A. Yes.

XQ. 60. Did you have anything to do with the horn business prior to the spring of 1902? A. No.

XQ. 61. From the spring of 1902 to the first part of 1906, what were your duties in the Standard Metal Mfg. Co.? [515] A. Same as at present.

XQ. 62. Did you have anything to do with the selling of your products during the years 1902-1905, inclusive? A. Yes.

XQ. 63. Did you have occasion to become familiar with the various horns that were being offered on the market during the years 1902-1905, inclusive?

A. Yes.

By Mr. HICKS.—This line of examination is objected to on the ground that it has no bearing on the direct examination and a motion will be made to strike out the preceding cross-examination as not connected with the direct examination and all similar questions and answers.

A. Yes.

XQ. 64. Did you travel about among the trade during those years? A. Yes.

XQ. 65. Is it not a fact that prior to the fall of 1904 or early part of 1905 or thereabouts the B. & G. horn

(Deposition of William A. Lawrence.)

was the popular horn that was generally made and sold not only by your company but by competing horn manufacturers? A. Yes, it was.

XQ. 66. And is it not a fact that subsequent to the fall of 1904 and early in 1905 or thereabouts the B. & G. horn was practically superseded by the flower horn on the part of not only your company, but also the competing manufacturers of horns?

A. Yes, it was.

XQ. 67. Referring to your answers to Q. 28, 29, please state whether you do not know as a fact that the Searchlight Horn Company, in addition to making the folding horns, one of which you have produced, and the four-strip or section horns, one of which you have produced, have also made and put upon the market a nonfolding horn made of a considerable number of sections, such as is illustrated in the flower-horn illustration on "Defendant's Exhibit, Hawthorne & Sheble Advertisement of 1905"?

By Mr. HICKS.—Question is objected to as indefinite and leading, there being no description of the horn inquired about, sufficient to determine what it was.

A. I think they did. [516]

By Mr. HICKS.—The answer is objected to as hearsay and defendant moves to strike it out.

XQ. 68. Do you not know that Nielsen, the patentee of the patent in suit, or the company organized by him, known as the United States Horns Co., predecessor of the Searchlight Horn Co., in ownership of the Nielsen Patent, made and offered for sale flower

(Deposition of William A. Lawrence.)

horns of the construction shown in the illustration, "Defendant's Exhibit, Hawthorne & Sheble Advertisement of January 15, 1905"?

By Mr. HICKS.—Objected to as calling for hearsay evidence and upon the ground that the question states facts upon which there is no proof.

A. It did.

XQ. 69. When Mr. Krabbe notified you of the ownership by the concern represented by him, of the Nielsen Patent and warned you against infringement did he show you any of the horns then being made by his concern?

By Mr. HICKS.—Same objection as to the facts stated in the question.

A. I am not sure whether he showed them to me personally or not.

XQ. 70. By your last answer do you mean that you may have seen such horns as were not shown you by Mr. Krabbe? A. Yes.

XQ. 71. Is it a fact that at or about the time of Mr. Krabbe's visit to you you saw horns that were made by the concern represented by Mr. Krabbe, which horns had the construction illustrated in the flower horn cut on "Defendant's Exhibit, Hawthorne & Sheble Advertisement of January 15, 1905"?

A. Yes.

XQ. 72. Prior to the time when you saw these horns that you say were made by the concern represented by Mr. Krabbe, had you seen, on the market, any horn made of metal strips so shaped that the complete horn was of a flaring contour, tapering

(Deposition of William A. Lawrence.)

from the narrow end to a wide bell end and flaring rapidly close to the bell end, having a considerable number of sections fastened together at the edges to form ribbed seams on the outside of the horn and the flaring end of the horn having a scalloped contour? A. No, I have not. [517]

XQ. 73. Had you, prior to the time you saw the horn or horns made by the concern represented by Mr. Krabbe, seen on the market any horn made of metal strips so shaped that the complete horn was of a flaring contour, tapering from the narrow end to a wide bell end and flaring rapidly close to the bell end and having a considerable number of sections fastened together at the edges to form ribbed seams on the outside of the horn?

A. No, I had not.

XQ. 74. Is it not a fact that if such a horn as is described in the last question had been upon the market in any appreciable quantity prior to the time you saw the horns made by the concern represented by Mr. Krabbe you would have had knowledge of the same?

By Mr. HICKS.—Objected to as hypothetical.

A. Yes.

XQ. 75. Were there any other styles of metal horns sold in any considerable quantity prior to the fall of 1904 than the so-called B. & G. horn?

A. Not that I know of.

XQ. 76. Did your company ever make and sell a glass horn? A. No.

XQ. 77. Do you know of the sale or offering for

(Deposition of William A. Lawrence.)

sale of glass horns?

By Mr. HICKS.—Objected to as immaterial.

A. I believe there were a few, a very few. I saw one of them.

XQ. 78. But is it not a fact, according to your experience, that the glass horns proved impracticable as a horn for phonographs? A. Yes.

XQ. 79. Referring to your answer to Q. 37 and the exhibit offered in evidence in connection therewith as "Defendant's Exhibit, Model of Hawthorne & Sheble Aluminum Horn made by Mr. Lawrence from the Testimony of Frank H. Stewart," please state whether, according to your experience and observations, any aluminum horn of the construction of this exhibit, was offered on the market prior to the fall of 1904, or early part of 1905?

A. I never saw one or heard of it, in my trips to the trade.

XQ. 80. I refer you to Mr. Stewart's answer to Q. 14. Please state [518] whether if the sections referred to in Q. 14 were cut with a straight shear, as therein stated, and the sections were then joined as therein stated they would produce a horn with a curved exterior contour like "Defendant's Exhibit, Model of Hawthorne & Sheble's Aluminum Horn Made by Mr. Lawrence from the Testimony of Frank H. Stewart," or whether they would not result in a conical horn with a straight outer contour from the small end to the bell.

By Mr. HICKS.—Question objected to on the ground that it misstates the testimony of Mr. Stew-

(Deposition of William A. Lawrence.)

art and is intended to mislead the witness.

A. Yes, they would. They would make a straight cone.

XQ. 81. Is it not a fact that the term "flower horn" came into the trade after the horns made by the concern represented by Mr. Krabbe were offered on the market?

By Mr. HICKS.—Objected to on the ground that this question, like the other questions asked in the cross-examination, has no basis in the direct examination; and also on the ground that the witness has no knowledge of the matter inquired about or that his knowledge extends far enough back in the art to enable him to make answer thereto; and a motion will be made to strike out the cross-examination of the witness for the reasons stated.

A. I believe it was.

XQ. 82. From 1902 to the fall of 1904 or early part of 1905 were you familiar with the horns being sold on the market by the Hawthorne & Sheble Mfg. Co.?

A. As a competitor we naturally would know what they were selling.

XQ. 83. And did you know what they were selling during those years in the way of horns? A. Yes.

XQ. 84. And are you familiar with what they have been selling since 1904 or early part of 1905 in the way of horns?

A. Yes, up to the time that they failed.

XQ. 85. Is it not a fact that since the early part of 1905 the Hawthorne & Sheble Company super-

(Deposition of William A. Lawrence.)

seded the B. & G. horn formerly sold by it with the flower horn illustrated in their advertisement of January 15, 1905? A. Yes. [519]

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 86. I call your attention to Mr. Frank H. Stewart's answers to Qs. 21 and 22 and to XQ. 184 and to the outlines made by him, referred to in XQs. 184 and 185, in explanation of what is said in answer to Q. 14. Please state whether, if the sections of the aluminum horn were made as described by Mr. Stewart in the parts of his testimony and the drawings to which I have called your attention the shape of the resulting horn would be a cone.

A. No, they would not.

RDQ. 87. Please compare the shape of the model horn which you have produced and the aluminum horns, made by you from Mr. Stewart's testimony, with the shape of a horn which would result from making a horn in accordance with the parts of Mr. Stewart's testimony and the two outline drawings to which I have called your attention.

A. The shape is identical with the sketches, for all practical purposes.

By Mr. HICKS.—Defendant offers in evidence the letter of Sept. 5, 1913, referred to by the witness in answer to XQ. 44. The same is marked "Defendant's Exhibit, Letter to Mr. Lawrence of Sept. 5, 1913, with Reference to the Making of Model Structures or Horns, Frank Z. Demarest, Examiner."

RDQ. 88. Did you enter into any contract on be-

(Deposition of William A. Lawrence.)

half of the Standard Metal Mfg. Co. with the Searchlight Horn Co. at or about the time that you received from the Searchlight Horn Co. the two horns which you have produced and which have been offered in evidence?

By Mr. DUNCAN.—Objected to as irrelevant and immaterial.

A. Yes, we did.

RDQ. 89. Will you please produce the contract, in view of the objection. A. I produce it.

By Mr. HICKS.—Defendant offers the contract in evidence and the same is marked “Defendant’s Exhibit Contract of May 5, 1908, Between Searchlight Horn Co. and Standard Metal Mfg. Co., Frank Z. Demarest, Examiner.” [520]

By Mr. DUNCAN.—The exhibit is objected to as irrelevant and immaterial, subject to this objection it is stipulated that the original contract may be withdrawn and a copy substituted for the original with the same force and effect as the original.

RDQ. 90. Upon the making of this contract did you receive from the Searchlight Horn Co. any of the folding horns, referred to in the contract?

A. Yes, we did.

RDQ. 91. Have you here one of the folding horns then received from the Searchlight Horn Co.?

A. Yes, I herewith produce it. It is the one that I have heretofore referred to and I offer it in evidence.

RDQ. 92. Please look at Figs. 1 and 3 of the Nielsen Patent in suit and state whether you ever saw,

(Deposition of William A. Lawrence.)

on the market, a horn for a phonograph, made up of sections of metal joined together at their edges by ribs formed, as shown especially in Fig. 3, by two outwardly-extended flanges abutting against each other?

A. I saw those made by the U. S. Horn Company.

RDQ. 93a. Is that all? A. Yes.

RDQ. 93b. And were those shown to you by Mr. Krabbe or did you see them at about the time he visited you? A. Yes.

RDQ. 94. Referring to the Hawthorne & Sheble advertisement of Jan. 15, 1905, please state whether the flower horn that went into use had seams (lock seams) like those of the horn of the advertisement or seams like the butt seams of Fig. 3 of the Nielsen Patent?

By Mr. DUNCAN.—Objected to as irrelevant and immaterial.

A. There may have been a few with the butt seam, but they were all practically lock seamed.

RDQ. 95. When Mr. Krabbe called upon you had the Standard Metal Mfg. Co. manufactured or put upon the market flower horns such as are shown in said advertisement of Jan. 15, 1905? A. Yes.

[521]

RDQ. 96. And had other concerns put the same style of flower horn upon the market at that time?

A. Yes.

RDQ. 97. And was the Standard Metal Mfg. Co. one of the first to enter upon the manufacture of said style of flower horn? A. One of the first, yes.

(Deposition of William A. Lawrence.)

RDQ. 98. Had other concerns preceded it?

A. Yes. Hawthorne & Sheble and the Tea Tray Co. preceded us in the manufacture of these goods.

RDQ. 99. When did you begin your trips to the trade, referred to upon your cross-examination?

A. In the year 1903, 1904, possibly the latter part of 1902.

RDQ. 100. Prior to the time that you began your trips to the trade, did you have any knowledge of the horns that were on the market and manufactured for phonographs in the this country or elsewhere?

A. No.

By Mr. HICKS.—In view of the answer of the witness the motion to strike out the hearsay testimony given upon the cross-examination of the witness is repeated.

RDQ. 101. Please state, if you know, what is the practice to-day of the different phonograph companies in making up phonographs and other talking machines with respect to the employment of a horn?

A. They are making more of the concealed horn type, than they have been in the past.

RDQ. 102. Please look at pp. 8 and 9 and p. 43 of the Talking Machine World for Sept. 15, 1913, and state, if you know, whether the photographs there shown and described illustrate the policy of talking machine manufacturers to-day, with respect to the elimination of the old type of horn?

A. I believe it does.

By Mr. HICKS.—Defendant offers in evidence pp. 8 and 9 and p. 43 of the Talking Machine World

(Deposition of William A. Lawrence.)

for Sept. 15, 1913, and the same is marked "Defendant's Exhibit, Illustration and Description of Edison Phonographs, Sept. 15, 1913, Frank Z. Demarest, Examiner."

Redirect examination closed.

Recross-examination by Mr. DUNCAN. [522]

RXQ. 103. Please state whether the use of straight shears referred to in answer to Q. 14 of Mr. Stewart's testimony would produce straight sections with curved edges as shown by the Stewart illustrations shown you on your direct examination.

A. They can be cut with a pair of hand shears the blades of which are straight.

RXQ. 104. Please state whether the joining together of tapering sections cut from a rectangular oblong piece of metal such as is shown in diagram 3 of Ellsworth A. Hawthorne, Sept. 30, 1913, such sections being joined in the manner shown in diagram 4, would produce a horn with curved sides or would produce a conical horn with straight sides.

A. They would produce a conical horn with straight sides.

RXQ. 105. Please state whether, under the agreement offered in evidence, between your company and the Searchlight Horn Co. you made any payments on the flower horn that you say were made by your company. A. No, we did not.

RXQ. 106. Did you mark any of the flower horns made by your Co. with the patent number or date of the Nielsen Patent? A. No.

RXQ. 107. Did you make payments under the

(Deposition of William A. Lawrence.)

agreement, offered in evidence, to the Searchlight Horn Co. on folding horns? A. Yes, we did.

RXQ. 108. Is it not a fact that the metal flower horns made by your company as well as those made by your competitors have the several sections thereof joined by longitudinally-arranged ribs on the outside of the horn? A. Yes.

RXQ. 109. Did you not see metal flower horns having the flanges at the edges of the sections abutting each other as shown in figure 3 of the Nielsen Patent at the shop of the Bettini Co. in New York City in 1904 or the early part of 1905? A. I did.

RXQ. 110. As a practical manufacturer of tinware, would you not say that the forming of the outwardly-extending ribs shown in figure 3 [523] of the Nielsen Patent into the ordinary lock seam would be an obvious shop expedient? A. It would.

RXQ. 111. Referring to the alleged policy of the phonograph companies is it not a fact that their policy is to encourage the sale of cabinet machines because their patents on the phonograph proper have expired and they have recently obtained various patents on the cabinet construction?

By Mr. HICKS.—Objected to as grossly calling for hearsay evidence like the rest of the cross-examination.

By COMPLAINANT'S COUNSEL.—Attention is called to the fact that defendant's counsel has questioned the witness about the policy of the phonograph companies in view of which the above question would seem to be equally proper.

(Deposition of William A. Lawrence.)

A. I really could not answer that to any real satisfaction. I think it is more style than anything.

Recross-examination closed.

Deposition closed.

Signature waived.

Adjourned to Friday, at 10:00 A. M., same place.

October 9, 1913.

Met pursuant to notice.

Present: Counsel as before.

**[Deposition of William Edwin Parker, for
Defendant.]**

WILLIAM EDWIN PARKER, being duly sworn as a witness on behalf of defendant testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. Name, William Edwin Parker; age, 44; residence, 1551 Fairfield Ave., Bridgeport, Conn.; my present title is designing engineer for the American Graphophone Co., at Bridgeport, Conn.

Q. 2. How long have you been employed by the American Graphophone Co., and at what places, and in what capacities? [524]

A. I entered the employ of the American Graphophone Co. at Bridgeport, Conn., on December 29th, 1896, as an expert tool maker. One year later promoted to the position of general inspector of manufacture. I cannot give you any dates, but can say afterwards promoted to the position of mechanical engineer, assistant factory superintendent and pres-

(Deposition of William Edwin Parker.)

ent position, designing engineer.

Q. 3. In the course of your employment by the American Graphophone Co. at Bridgeport, Conn., which you say, began on December 29, 1896, have you had anything to do with a talking machine made and sold by that company and called the Graphophone Grand? A. I have.

Q. 4. Please state, if you know, when the Graphophone Grand was first manufactured at Bridgeport, Conn., and what you had to do with the manufacture and sale of that machine.

A. According to our Records, we shipped from the factory, during the month of December, 1898, twenty-three (23) machines. This is the first of which I have any knowledge except one model machine which was made in the laboratory under Mr. McDonald's directions, deceased, and exhibited prior to this date. My duties in regard to the manufactured product were to inspect and test the finished product.

By Mr. DUNCAN.—Answer objected to as involving secondary and incompetent testimony.

Q. 5. Have you a present recollection of when the Graphophone Grand was first made at Bridgeport, Conn.?

A. Yes; a model machine was made during the summer of 1898.

Q. 6. Have you any means of refreshing or confirming your present recollection in regard to the date when the Graphophone Grand was first made at Bridgeport, Conn.?

A. I have. The advertising literature gotten out

(Deposition of William Edwin Parker.)

by the American Graphophone Co., which fixes this date.

Q. 7. Have you here any of the advertising literature referred to by you in answer to the last question? A. I have. [525]

Q. 8. Please produce it.

A. Here, I produce it.

Q. 9. Where did you obtain this pamphlet, entitled "The Graphophone Grand"?

A. From the files of the printing department of the American Graphophone Co. at Bridgeport.

Q. 10. When was this pamphlet issued?

By Mr. DUNCAN.—Objected to as incompetent, the best evidence being the document itself, unless the witness has personal knowledge apart from the document as to the date of its printing and circulation.

A. I am unable to state positively.

Q. 11. When did you first see this pamphlet describing the Graphophone Grand?

A. During the year 1899.

Q. 12. What is there in the pamphlet which refreshes your recollection with respect to the date on which the Graphophone Grand was first at Bridgeport?

A. Extracts with dates from the Philadelphia Ledger, from the Fourth Estate, Philadelphia American, Hartford Times, Washington Times, Electrical World, New York Daily Times, New York Tribune, Washington Post, Washington Evening Star, Music Trade Review and the New York Dramatic Mirror.

(Deposition of William Edwin Parker.)

Q. 13. These extracts from the papers or publications referred to by you are all dated in December, 1898, except that the extract from the Music Trade Review appears to have no date and the extract from the New York Dramatic Mirror is dated January 21, 1899. That is so, is it not? A. That is correct.

By Mr. HICKS.—Defendant offers in evidence the pamphlet produced by the witness and the same is marked “Defendant’s Exhibit, Pamphlet Describing the Graphophone Grand of 1898, Frank Z. Demarest, Examiner.”

Q. 14. Please describe fully the work which you did in connection with the Graphophone Grand machine.

A. Inspecting and testing the finished product.

Q. 15. When did you perform this work of inspecting and testing the finished Graphophone Grand machine? [526]

A. After the factory had closed at 6:00 o’clock in the evening and starting on or about December 1st, 1898. This work on my part continued up to approximately June 15, 1899, after which date I was relieved of this work except as to having general supervision over the same.

Q. 16. While you were inspecting and testing the Graphophone Grand from December 1, 1898, to June 15, 1899, was that machine equipped with a horn?

A. It was.

Q. 17. Describe the horn or horns with which the Graphophone Grand was equipped between the dates mentioned in the last question.

A. The regular equipment of the machine was a

(Deposition of William Edwin Parker.)

small 14-inch spun or hammered brass horn for recording purposes. The large horn, which was the regular large or reproducing horn, which was 56 inches in length, was the regular equipment of the machine. No, I want to change that. The large or reproducing horn was special and was sold separate from the machine and was specified by the customer as to what kind of a horn he desired. In some instances, after approximately the first 150 machines had been completed, a special horn was used which was formed from leaves or strips longitudinally from the ferrule to the bell or large end of the horn.

Q. 18. Please describe fully this special horn composed of leaves extending longitudinally from the ferrule to the bell or large end of the horn.

A. This horn was made of bright aluminum, having a tapered ferrule approximately 12 inches long. Extending from this to the large or bell end of the horn was a series of tapered strips approximately 6 inches wide at the large end and tapering down to the ferrule. They were joined together at their edges, in what manner I cannot state, except that there was a ridge at this point, and the outer end of the horn, or bell, was cylindrical and turned over in a bead, differing from the so-called flower horn of the present day in that the outer edge of the strips were neither concave or convex; [527] but the bell itself was perfectly round.

Q. 19. Please describe a little more fully the shape of this horn made of strips of bright aluminum.

A. The horn in its general contour or shape was a

(Deposition of William Edwin Parker.)

straight taper from the small ferrule to the point where the leaves or strips were joined to the ferrule. From that outward, extending to the large end or bell of the horn, it was of a flaring shape, very similar to the well-known flower horn of the present day.

Q. 20. Please make a sketch or drawing, if you can, of the outline of one of the sections composing this horn of bright aluminum leaves.

A. That is as I remember it.

Q. 21. Please explain the sketch which you have made.

A. The sketch that I have made from memory is as near, in reduced scale, as the horn which was used in the special cases on the Graphophone Grand, the outer end being approximately 6 inches wide, the small end tapering down to possibly an inch and a half. The thickness would be .008 and .0015 of an inch. The curvature of the side would be of such a shape as would give the flaring or bell effect on the outer end of the horn.

Q. 22. You have made three figures on the sketch. Please number them 1, 2, and 3.

A. I have numbered them #1, #2 and #3 and have marked them, "plan view," "side view" and "end view."

Q. 23. Now please make a sketch or drawing, on the same sheet of paper, marking it number 4, showing the outline of the side of one of the aluminum sections when the several sections had been assembled to form the aluminum horn.

By Mr. DUNCAN.—Objected to as incompetent, it

(Deposition of William Edwin Parker.)

not being shown that the witness has knowledge to enable him to make the sketch called for.

A. This view would be approximately the same as shown in figure 2.

Q. 24. Does figure 2 indicate the flaring bell?

A. It does not. [528]

Q. 25. What I want you to do is to make a sketch, marking it No. 4, that will show the outline of one of the sections, as viewed from the side, as it would appear when assembled with the other sections to form the flaring bell of the horn as described by you.

By Mr. DUNCAN.—Objected to as leading.

A. I have made the sketch and marked it #4.

By Mr. HICKS.—Defendant offers in evidence the drawings numbered 1, 2, 3 and 4, just made by the witness and the same is marked “Defendant’s Exhibit, Parker’s Sketches of the Aluminum Horn made of Strips and used with the Graphophone Grand prior to June 15, 1899, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Objected to as incompetent and secondary.

Q. 26. You say that this aluminum-strip horn consisted of two parts; first, the stem or ferrule, and, second, the bell part composed of the aluminum strips. Please state how the stem or ferrule was made, of what material and of how many pieces of the material.

A. The entire horn was made of aluminum, including the stem. I am unable to state whether the stem and ferrule, that is to say, the piece which fitted on to

(Deposition of William Edwin Parker.)

the carriage of the machine was integral with the long stem or not.

Q. 27. What I want to know is whether the stem, apart from the end which fitted on to the carriage of the talking machine, was made of one piece or of more than one piece of aluminum.

By Mr. DUNCAN.—Objected to as leading.

A. I cannot say. I have already explained that I cannot state whether it was made of one or two pieces.

Q. 28. You evidently do not understand my present question. I understand you to say that the stem or ferrule was about 12 inches long and that you cannot recollect whether the small end of the stem which fits on to the carriage was made integral with the rest of the stem or not. A. That is correct.

Q. 29. Now, that is not what I am inquiring about. What I want to know is whether you can state how the stem 12 inches long was formed [529] from aluminum.

By Mr. DUNCAN.—Objected to as leading.

A. I cannot state how it was formed. Its ultimate shape was a cone.

Q. 30. A cone 12 inches long?

A. That is correct.

Q. 31. Can you state of how many pieces of aluminum this cone 12 inches long was made up?

By Mr. DUNCAN.—Objected to as leading.

A. From one piece.

Q. 32. Can you state the height of this aluminum-strip horn that was used with the Graphophone Grand machine prior to June 15, 1899?

(Deposition of William Edwin Parker.)

A. It was approximately the same length as what we now know as a 36-inch horn.

Q. 33. Can you state what was the width of the horn at the large end, that is to say, at the extreme end of the bell?

A. Not positively; but the conformation of the horn was such that I can say it would be from 24 to 28 inches in diameter.

Q. 34. Can you refer to any horn or to any illustration of a horn which will show the shape or construction of the aluminum-strip horn used with the Graphophone Grand prior to June 15, 1899?

By Mr. DUNCAN.—Objected to as leading.

A. I can.

Q. 35. Please do so.

By Mr. DUNCAN.—Same objection.

A. I offer this cut of an advertising circular of the American Graphophone Co., which has, on p. 35, a horn whose general appearance was similar to the horn used on the Graphophone Grand, except as to the shape of the outer end of the large bell and to the size of the ferrule where it was attached to the talking machine.

By Mr. DUNCAN.—Objected to as incompetent and secondary.

Q. 36. Please specify the difference in the size of the small ferrule where it was attached to the talking machine. [530]

A. The diameter of the ferrule used on the Graphophone Grand on the inside of the ferrule was approximately five-eighths ($\frac{5}{8}$) of an inch. The diameter

(Deposition of William Edwin Parker.)

of the horn shown in the cut is approximately one inch and one-eighth ($1\frac{1}{8}$).

By Mr. HICKS.—Defendant offers in evidence the pamphlet produced by the witness and the same is marked “Defendant’s Exhibit, Pamphlet Showing, on p. 35, a Cut Illustrating the Aluminum Horn used on the Graphophone Grand prior to June 15, 1899, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Objected to as incompetent and secondary and the title of the exhibit is objected to as misleading.

Q. 37. There are a number of horns in this room. Do any of them illustrate the aluminum horn used on the Graphophone Grand machine prior to June 15, 1899?

By Mr. DUNCAN.—Objected to as leading.

A. There is; this horn, which is partially finished, appears to be practically of the same shape as the aluminum horn used on the Graphophone Grand except that the outer or large end of the strips are not of such a shape as to make the outer end absolutely round as the aluminum horn was which was used on the Graphophone Grand.

By Mr. HICKS.—The witness has referred to “Defendant’s Exhibit, Model of Hawthorne & Sheble’s Aluminum Horn made by Mr. Lawrence from the Testimony of Frank H. Stewart.”

Q. 38. If you press defendant’s exhibit, model horn, to which you have referred, down hard upon the floor, thereby eliminating, as far as possible, the spring of the metal, the large end of the horn approximates a

(Deposition of William Edwin Parker.)

circle, does it not? A. It does.

Q. 39. How did you come to select this model horn to illustrate the aluminum horn?

A. From recollection only, or, from memory only, I suppose would be a better word.

Q. 40. Did you ever make any personal use of the aluminum horns used with the Graphophone Grand, prior to June 15, 1899, that is, the use of such a horn aside from your work of inspecting and testing at [531] the factory? A. In a way, yes.

Q. 41. Please describe what you did.

A. I requested permission from the factory management to give an exhibition of the Graphophone Grand, which was then a novelty, at a church entertainment which was at a building rented by St. George's Episcopal Church at Clinton Ave., Bridgeport, Conn.

Q. 42. Did you obtain the permission? A. I did.

Q. 43. Did you give the exhibition? A. I did.

Q. 44. At the time of the giving of the exhibition did anything happen to the horn? A. It did.

Q. 45. What?

A. At the conclusion of the entertainment those present crowded around the machine to examine it and I having previously removed the horn from the machine, setting it on the floor, a little boy accidentally stepped on the flaring edge of the horn, thereby injuring it on one of the leaves or panels. This accident caused me considerable uneasiness, due to the fact that I knew the supply of these horns must necessarily be limited, and I was not sure whether it could

(Deposition of William Edwin Parker.)

be repaired or not; but on returning the outfit to the factory on the following day I was able to make a satisfactory repair and put the horn in such shape that it could be disposed of commercially. This accident was very vividly impressed on my mind, due to the censure that would be given me on not taking better care of this borrowed horn and machine.

Q. 46. What was the nature of the injury caused to the horn by the boy stepping on the flare of it?

A. The mark of the heel of a shoe where he inadvertently pressed the metal down on the flaring outer edge of the horn.

Q. 47. What did you do in order to remedy that injury?

A. Forced the metal back into its original position.

Q. 48. What experience, if any, have you had in the use of aluminum? [532]

A. A wide experience in the forming of small aluminum parts and also of casting aluminum.

Q. 49. When did your experience in the use of aluminum begin? A. 1890.

Q. 50. What characteristics has aluminum, that have any materiality with regard to the possibility of joining two pieces of aluminum together?

A. Up to quite recently it has been considered impractical in the arts to join aluminum except by riveting or forming the sections together in some manner so that they will be interlocking. Brazing, soldering and similar methods have not been considered, so far as my knowledge goes, a practical, satisfactory and permanent method of joining aluminum

(Deposition of William Edwin Parker.)

together, until recently, that is to say, within the past 4 or 5 years.

Q. 51. Please state, if you know, what are the characteristics or qualities of aluminum, which have determined the methods resorted to in order to join two pieces of aluminum together.

A. Do I understand you mean the recent methods of joining two pieces together?

Q. 52. You said that until 4 or 5 years ago there was no known practical, commercial way of joining together two pieces of aluminum by such a method as soldering, so far as your information went. What I want you to state, if you can, is what qualities of aluminum, if any, prevented the practical commercial soldering of two pieces of aluminum.

A. Without going into the chemical or any other analysis of aluminum, the nature of aluminum is understood to be of a greasy nature, which prevents the solder or other material from joining the two strips together. The fluxes that have been used heretofore were not of such a nature to act as a cleansing agent for the two surfaces to be joined, and it was almost impossible to join them unless by [533] practically fusing the two parts together and subjecting them to a heat which would melt the aluminum.

Q. 53. Who was the first purchaser of a Graphophone Grand talking machine?

A. I have not positive knowledge of who the purchaser was. I was present at an exhibition given in the factory office of the American Graphophone Co. and there was present at the time Mr. Hawthorne of

(Deposition of William Edwin Parker.)

the Hawthorne & Sheble Co. and several others. A few weeks subsequent to this date Mr. McDonald informed me, on my inquiry, as to what had become of the first machine, that the Hawthorne & Sheble Co. had purchased the machine.

By Mr. DUNCAN.—Objected to as hearsay and incompetent.

Q. 54. About how many of the Graphophone Grand talking machines were equipped with the aluminum horns during the period that you inspected and tested the same, prior to June 15, 1899?

A. On each machine which I inspected and tested I stamped a number. I have a clear and distinct recollection that the last machine inspected was "No. 347." I should estimate that there were not over (20) machines equipped with these aluminum horns during the period that I was engaged on this work.

Q. 55. From whom did the American Graphophone Co. purchase horns for talking machines at the time you were engaged on this work of inspecting and testing the Graphophone Grand machines up to June 15, 1899?

A. I have positive knowledge that they purchased horns from the Tea Tray Co. and from the Hawthorne & Sheble Co. There may have been other suppliers that I do not know of.

Q. 56. Please state whether you have been able to find, at the present day, one of these aluminum horns that were used upon the Graphophone Grand machine prior to June 15, 1899.

(Deposition of William Edwin Parker.)

A. I have not, but I am making a careful search at the present time. [534]

Q. 57. What do you think of the possibility of obtaining to-day a horn that was in use in 1899?

A. I consider it very remote for the reason that the aluminum horn did not retain its lustre, becoming discolored very quickly and I think that the rapid improvements that have been made on horns by covering them with a more durable covering and finishing them with Japan and other methods that the horns would be destroyed.

Q. 58. Were these aluminum horns that were used with the Graphophone Grand before June 15, 1899, without any covering of the aluminum metal whatsoever? A. They were.

Q. 59. What has been the practice of the American Graphophone Co. with respect to keeping or not keeping horns for talking machines?

A. The style and model as to shape and other improvements in talking-machine horns has changed very frequently in the past twelve or fifteen years. When the style or shape changed and our competitors adopted the improved shape we were compelled to follow suit and on numerous occasions, I would state possibly 5 or 6 times, I have personal knowledge of the fact that the horns which were in stock were either broken up and sold as junk or disposed of to parties who could find use for them. We have recently had a clean-up of several thousand horns of this nature in our plant.

(Deposition of William Edwin Parker.)

Q. 60. What was the cause of the recent clean-up of horns in plant of the American Graphophone Co.?

A. In a large measure these horns were made for the cylinder type of talking machine; and the American Graphophone Co. are not at the present time manufacturing a great many of this type of machine and these horns which were disposed of were principally for cylinder machines.

Q. 61. What is the present tendency with respect to using an exposed horn with a talking machine?

A. According to our present line of manufacture the cylinder machine [535] is dying out. There seems to be very little demand for cylinder machines as the commercial type of machine.

Q. 62. Is the cylinder machine a machine employing an exposed horn? A. In some cases.

Q. 63. Please state the present tendency, not with regard to the use of cylinder machines, but with regard to the use of an exposed horn with talking machines.

A. The tendency is entirely toward the concealed type of horn built in the cabinet and not exposed.

Direct examination closed.

RECESS.

Cross-examination by Mr. DUNCAN.

XQ. 64. According to your recollection from whom did your company get the aluminum horns that you say were used in connection with the Graphophone Grand prior to June 15, 1899?

A. I have no knowledge where they were obtained from.

(Deposition of William Edwin Parker.)

XQ. 65. Were these horns made by your company?

A. They were not.

XQ. 66. From whom was your company buying those horns at that time?

A. I had knowledge that they were buying from the Hawthorne and Sheble and Tea Tray Co. only. There may have been others.

XQ. 67. How long did your company continue buying these horns from the Tea Tray Co.?

A. I am unable to state.

XQ. 68. How long did it continue buying these horns from Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co.?

A. We are buying horns at the present date with their change of firm name.

XQ. 69. Did you continue buying horns from the Tea Tray Co. for any length of time after June, 1899? A. I do not know.

XQ. 70. Referring to the catalogue that you produced this morning, entitled "The Graphophone Grand," please state when you saw this particular catalogue for the first time; I mean the particular one that you have produced this morning.

A. One week ago to-day. [536]

XQ. 71. When in answer to Q. 11 you said that you first saw this pamphlet during 1899 what did you mean?

A. I meant that I saw the issue, not the particular produced pamphlet.

XQ. 72. Do I understand that copies of this same issue including the particular pamphlet that you

(Deposition of William Edwin Parker.)

have produced have been in the files of your company since the pamphlet was issued? A. They have.

XQ. 73. Where did you get the circular that you produced this morning in answer to Q. 34, which pamphlet is entitled "Columbia Disc and Cylinder Graphophone"?

A. I obtained that from the cost department of the American Graphophone Co.

XQ. 74. Can you state when this circular was published? A. I cannot. It is undated.

XQ. 75. It was published later than 1906, was it not?

A. Without positive knowledge I should say yes.

XQ. 76. You would believe that to be the case, would you not, from the fact that at the second page it speaks of the Columbia Graphophone obtaining the Grand Prize at Milan in 1906?

A. That would necessarily imply that it was published subsequent to that date.

XQ. 77. Where has this circular been since the time of its issuance?

A. This particular copy you refer to? It has been in the plant of the American Graphophone Co. It was in the possession of a clerk who kept it for reference only.

XQ. 78. Have you any data upon which you base your estimate as to the number of Graphophone Grams that were sold prior to June, 1899, in connection with which the aluminum horns were supplied?

A. I have no data whatever on that point. It is simply a question of memory. There was a limited

(Deposition of William Edwin Parker.)

number and I am very confident that there was not 50 and I am sure there was over 10. I used the figures that I did to get something tangible. [537]

XQ. 79. Were these aluminum horns that you have been describing in your direct testimony listed in any of your catalogues that you know of?

A. They were not.

XQ. 80. Can you give the names of any customers to whom Graphophone Grands were shipped, supplied with the aluminum horns to which you have referred?

A. I have no positive knowledge further than the statement made to me by Mr. Hawthorne in which he stated that the first model machine made by the American Graphophone Co. of the G. G. type or Graphophone Grand was equipped with this horn. It is hearsay; I cannot vouch for the truth of the statement. I might add to that statement that after the machines were inspected by me they were delivered to the shipping department and I had no knowledge of their destination or of the purchaser.

XQ. 81. Did you have any knowledge of the method followed in forming the aluminum horns that you described? A. I had no knowledge.

XQ. 82. Did you have charge of these aluminum horns before they were tested on the machines?

A. I had charge to this extent. When the horns were delivered to our receiving department and I required one of these horns to use on a machine I went to the receiving department and selected the particular horn that was specified on that particular

(Deposition of William Edwin Parker.)

shipment of machines. They were in storage.

XQ. 83. Did you have anything to do with the buying of these aluminum horns? A. I did not.

XQ. 84. While they were in storage were they under your care? A. They were not.

XQ. 85. Am I correct in understanding then that you came in contact with these horns only when you asked for one for testing purposes?

A. No, you are not correct; I received instructions to equip certain machines with certain horns. On receipt of those instructions I went to the room in which these horns were stored and selected the particular type of horn which my instructions called for. The [538] room proper was under the charge of the receiving department to receive all supplies for the American Graphophone Co.

XQ. 86. Now referring to the aluminum horns that you mentioned in your direct examination, just what did you have to do with them after you received an order and went to the store room and got the horn or horns?

A. My duties consisted first of inspecting the machine proper to see that it run quiet and regular and the horn was properly assembled. The next point was to make a dictation on the machine with the small horn to see that the recording apparatus was in working condition and third to reproduce records with the use of the horn that was to go with the machine, putting the horn on a horn-stand or crane and equipping it on the machine, having the complete unit in operating condition; after which I signed a

(Deposition of William Edwin Parker.)

statement that it was O. K. and it was then delivered to the shipping department for final disposition.

XQ. 87. How do you fix the date when you became inspector of the machines as December, 1898?

A. I fix the date by the fact that I was working in a department where the machines proper were being made, that is, the parts were being made. In order to inspect these machines it was necessary to have a quiet room. On the opposite side of the building such a room was built and I made a request to the mechanical engineer to be assigned to this work. At that time Mr. McDonald who was factory manager, was making demonstrations at various cities of the east of the Graphophone Grand and the mechanical engineer had to wait for the return of Mr. McDonald from one of these exhibitions, to consult with him as to whether I could have this position or not; and from the extracts from the advertising literature I fix that date as the 1st of December, which is also confirmed by the stock reports of the American Graphophone Co., that in December, 1898, there was twenty-three of these machines made and they came through at the [539] rate of practically one a day. That is my reason for fixing this date.

XQ. 88. How do you fix June 15, 1899, as the approximate date when you ceased to act as inspector?

A. I was very proud to be selected to inspect this product inasmuch as it was the Edison De Luxe in talking machines listed at a very high price and it was my ambition to send out five hundred of them and not have one returned with a complaint. I had

(Deposition of William Edwin Parker.)

reached No. 347, as I stamped a number on each machine, when I was arbitrarily taken off the work. I did not complete my 500. The numbers of machines that were gotten out daily varied from 1 to 6 and I estimate that it was about June 15, inasmuch as I had been working entirely at night and the warm weather had begun to come on and I was relieved by the fact that I did not have to work during the hot spell.

XQ. 89. Just what were your duties after you ceased to inspect the machines for shipment?

A. I was officially appointed as general inspector of manufacture on all talking machines made by the American Graphophone Co.

XQ. 90. How long did you continue in this position? A. To about 4 or 5 years ago.

XQ. 91. How long did your company continue making and selling the Graphophone Grand?

A. The Graphophone Grand and modifications of it, types *which known* as the "Home Grand," "A. G.," "A. R." and "A. D.," at a pure guess I should say 6 years.

XQ. 92. Did your duties subsequent to June 1899, include the general inspection or supervision of the Graphophone Grand and its various modifications? A. Yes, it did.

XQ. 93. Is it not a fact that you purchased phonograph horns from the Tea Tray Co. only a short period of time?

A. I have no positive knowledge how long we purchased horns from the Tea Tray Co., or the quantity.

(Deposition of William Edwin Parker.)

XQ. 94. Is it not a fact that the great bulk of the horns purchased by your company were purchased from Hawthorne & Sheble or its successors?

A. At that period and for some time previous to that my understanding was, without positive knowledge, that the bulk of our horn business was done with the Tea Tray Co.

XQ. 95. Isn't it a fact that from the commencement of this century the Hawthorne & Sheble Co. have practically furnished all of the horns purchased by your company?

A. I am unable to state. I would like to add that I have very little knowledge of the purchases made by the Co., my duties not bringing me in touch with that phase of the business.

XQ. 96. Did Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co. furnish your company with aluminum horns for the Columbia Graphophone Grand? A. I am unable to state.

XQ. 97. Were the aluminum horns that you described on your direct examination the only aluminum horns that were supplied by your company in connection with the Graphophone Grand?

A. All that I know of.

XQ. 98. What was the regular reproducing horn that was supplied by your company in connection with the Graphophone Grand while you were acting as inspector prior to June, 1899?

A. They were either a hammered or spun brass horn known under the trade name as 56-inch.

XQ. 99. How long did your company continue sup-

(Deposition of William Edwin Parker.)

plying the hammered or spun-brass horn as the regular reproducing horn in connection with the Columbia Graphophone Grand?

A. Up to the time that the talking machine fell off and they ceased to be manufactured it was a regular product unless other horns were specified by the customer or purchaser.

XQ. 100. Did your company make these spun or hammered brass horns? A. They did not. [541]

XQ. 101. Who made these horns for your company? A. I have no positive knowledge.

XQ. 102. Are you familiar with the so-called B. & G. horn? A. Yes.

XQ. 103. Is the general appearance and contour of the B. & G. horn correctly illustrated in the upper right hand illustration of "Defendant's Exhibit, Hawthorne & Sheble Advertisement of January 15, 1905," which I now show you? A. Yes.

XQ. 104. Please state whether the spun or hammered brass horn that you say was the reproducing horn regularly supplied with the Graphophone Grand is correctly illustrated as to general appearance and contour in the catalogue which you produced this morning, entitled "The Graphophone Grand"?

A. It is correctly shown on the outside cover of this catalogue.

XQ. 105. Do you know how these brass horns were made? A. I do not, except in a general way.

XQ. 106. Were they spun from sheets of brass or hammered up from sheets of brass?

(Deposition of William Edwin Parker.)

A. There were two kinds of horns, one which was known as the hammered brass horn, which was without a seam, and the spun horns were made sometimes with one seam and sometimes with two seams, and at a subsequent date the method of attaching the bell was changed. In fact we had several variations of manufacture on this type of horn.

XQ. 107. In both the hammered and the spun horns were not the bells made up separately and attached by various methods to the mechanical body?

A. My recollection is that the first horn of either spun or hammered brass of the large type that the bell was not attached, that it was a continuous piece. At a later date, which I am unable to fix, the bell was attached to the stem.

XQ. 108. Did your company supply B. & G. horns with the Graphophone Grand? A. They did.

XQ. 109. Were these B. & G. horns supplied in place of the spun or [542] hammered brass horns? A. They were.

XQ. 110. Did the G. & G. horn supplant or practically supplant the brass horn for use in connection with the Graphophone Grand?

A. They did not; they were used to a limited extent.

XQ. 111. What were used to a limited extent?

A. The B. & G.

XQ. 112. Your company is the manufacturer of the Graphophones and talking machines sold by the Columbia Graphophone Co.?

(Deposition of William Edwin Parker.)

A. Yes; it is now known as the Columbia Graphophone Co.

XQ. 113. Prior to the date which you fixed as June, 1899, were you called upon to inspect other machines for shipment than the Graphophone Grand? A. I was.

XQ. 114. Were aluminum horns of the construction that you described on your direct examination supplied by your Co. in connection with other machines than the Graphophone Grand?

A. Not to my knowledge, or recollection.

XQ. 115. After you became general inspector of manufacture did your Co. supply, in connection with the Graphophone Grand or other machines, aluminum horns of the construction described by you on your direct examination?

A. I have no positive knowledge on which to answer your question, anything more than that I can say that about that period the so-called flower horn began to come in from somewhere between 1900 and 1903.

XQ. 116. Referring to the particular lot of aluminum horns that you have described in your direct examination or to horns of the same particular make that you described at that time please state whether your company continued supplying such aluminum horns with the Graphophone Grand or other machines after you became general inspector.

A. My duties did not bring me in touch with the situation and I cannot answer.

XQ. 117. As general inspector did you not know

(Deposition of William Edwin Parker.)

what kind of horns were being supplied with the different machines? [543]

A. Not always, for the reason as it is to-day horns are sometimes shipped from the manufacturer direct to the district in which they are sold. Sometimes they are supplied direct from the factory.

XQ. 118. Was it not part of your duties as general inspector to be familiar with the horns that were shipped from your factory in connection with the different machines?

A. It was not. The horns, as a broad proposition, required no inspection.

XQ. 119. Then your personal knowledge of the aluminum horns you have been referring to is limited to your testing of a number of such horns that you estimate to be between 10 and 50?

A. That is correct.

XQ. 120. Do you remember seeing any such horns sent out with your machines after you became general inspector?

A. Not that I can recollect.

XQ. 121. You have testified, I believe, that you do not recollect how the leaves were joined together?

A. Nothing further than that there was a ridge formed at the junction of the two parts where the edges were brought together. The method of attaching them, I do not remember what it was.

XQ. 122. Were these horns all of one size?

A. They were, approximately.

XQ. 123. You remember how the flaring or bell portion was joined to the stem? A. I do not.

(Deposition of William Edwin Parker.)

XQ. 124. Was the 12-inch stem spun out of a single sheet of aluminum?

A. I do not remember whether it had a seam or not.

XQ. 125. How was the 12-inch stem connected to the ferrule or short stem?

A. I am unable to state whether the small end of the stem was reduced to fit upon the carriage or whether it had a separate ferrule over which the long stem was spun or rolled into it to hold the two parts together or, in fact, how it was connected.

XQ. 126. Did you ever make any attempt or observe any attempt to solder aluminum strips together in forming the horn? [544]

A. Not in a horn, no.

XQ. 127. Is it not a fact that some of the seams in the aluminum horns referred to in your direct examination were joined or attempted to be joined by solder? A. I don't think so.

XQ. 129. Have you a positive recollection on this point? A. I have not.

XQ. 130. Your company advertised the brass spun or hammered horn in its literature, did it not?

A. In various sizes, yes.

XQ. 131. It also advertised the so-called B. & G. horn, did it not? A. In various sizes, yes.

XQ. 132. I understood you to say, however, that it did not advertise on any of its circular or other advertising matter the aluminum horns that you described in your direct examination?

A. Not in the year 1899.

(Deposition of William Edwin Parker.)

XQ. 133. What is the earliest advertising matter, of your Co. that you know of, that illustrates or describes the particular aluminum horn that you testified about on your direct examination?

A. I do not believe that the horn was ever adopted due to the fact that it was unsatisfactory and they did not continue to use it.

XQ. 134. In what respects was it unsatisfactory?

A. The nature of the aluminum was such that it would not retain its lustre and color, turning black and brown and presenting a generally unsatisfactory appearance and for that reason was abandoned.

XQ. 135. Did your company at any time advertise and offer for sale an aluminum horn?

A. Yes.

XQ. 136. Is such aluminum horn illustrated in the circular that you produced this morning, entitled "Columbia Disc and Cylinder Graphophones"?

A. It is not, but we have a circular issued some time previous to this, showing an aluminum horn, which was used on our type machine A. T. This aluminum horn, however, is a cylinder horn. It is not a built-up horn. [545]

XQ. 137. The aluminum horn you refer to is a conical horn with straight sides?

A. With straight sides and flaring bell.

XQ. 138. How was this aluminum horn finished? I mean was the aluminum covered in any way?

A. It was not.

XQ. 139. Is it not a fact that the aluminum horns that you described on your direct examination de-

(Deposition of William Edwin Parker.)

veloped difficulty in connection with the seams?

A. I never heard of any difficulty of that nature.

XQ. 140. How soon were these aluminum horns that you referred to on your direct examination abandoned by your company?

A. It is my belief there was not over 50 of these horns shipped out of the factory, due to their unsatisfactory appearance after they had been in use for a little while.

XQ. 141. I gather further from one of your answers on the cross-examination that you cannot be sure that more than 10 were shipped. Is that right?

A. My first estimate was that there was approximately 25 or 30. I afterwards stated that there might have been 10; there might have been 50. It is purely a question of memory.

XQ. 142. Where did you get the impression as indicated in one of your answers on your direct examination that the so-called flower horn was involved in this controversy?

A. For the reason that I never saw a horn built up of strips such as has been described, except that it took the so-called flower-horn shape.

XQ. 143. Who asked you to testify in this case?

A. The first intimation I had of it was from Mr. Herbert Budlong, our assistant factory manager.

XQ. 144. How long ago was that?

A. About two weeks ago. He asked me if I could find him one of these horns or if I had any recollection of using such a horn. I told him I had and I

(Deposition of William Edwin Parker.)

would try and find one. I was unable to find the horn.

Cross-examination closed. [546]

Redirect Examination by Mr. HICKS.

RDQ. 145. You have spoken of a ridge upon the aluminum horns described in your testimony, at the point where two adjacent sections of aluminum came together. Please state how this ridge ran, that is, from what point it began and where it terminated.

A. The ridge started at the large end of the stem and terminated at the outer edge or large part of the bell of the horn.

XQ. 146. And did you see this ridge when the horn was placed with its large or bell end resting upon the floor? A. You could.

XQ. 147. Can you give me the names of any persons who probably saw these aluminum horns during the period when you were making your tests of the Graphophone Grand machine prior to June 15, 1899?

A. I can give you one name, positively, and I think I have two others. I think I know of two other men who can testify to the fact that the built-up or panel horn, similar in shape to the present well-known flower horn was used during the time that I was inspecting the Graphophone Grands.

XQ. 148. Please give me those names and their places of residences.

A. Mr. Frank Hinckley, Mr. E. H. Byrnes and Mr. Frank Osborne, all of Bridgeport, Conn.

By Mr. HICKS.—Defendant's counsel gives notice

(Deposition of William Edwin Parker.)

that on Saturday, October 11, 1913, at 10:00 A. M., he will take the depositions of the three persons just named by the witness or of such of them as can be obtained at this place.

Redirect examination closed.

Deposition closed.

Signature waived.

By Mr. HICKS.—Defendant offers in evidence a paragraph from p. 15 of the “Edison Phonograph Monthly Published for Trade Use Only by the National Phonograph Co.” in New York in June, 1903, Vol. 1, No. 4, entitled “Megohorn” and same is marked “Defendant’s Exhibit, Description of the Megahorn in Edison Phonograph Monthly for June, 1903, Frank Z. Demarest, Examiner.” [547]

By Mr. DUNCAN.—Objected to as irrelevant and immaterial. Subject to which objection it is stipulated that the original publication may be withdrawn and a copy of the exhibit in question spread upon the record with the same force and effect as the original.

Oct. 9, 1913.

[Deposition of Ellsworth A. Hawthorne, for Defendant.]

ELLSWORTH A. HAWTHORNE, being duly sworn as a witness on behalf of defendant, resumes the stand and testifies as follows:

Direct Examination by Mr. HICKS.

Q. 259. Who, if you know, purchased the first Graphophone Grand talking machine sold by the American Graphophone Co. at Bridgeport, Conn.?

(Deposition of Ellsworth A. Hawthorne.)

By Mr. DUNCAN.—Objected to as incompetent and calling for hearsay.

A. I was informed by Pres. Easton of the Columbia Phonograph Co. that Hawthorne & Sheble purchased the first Graphophone Grand.

Q. 260. Did Hawthorne & Sheble purchase a Graphophone Grand talking machine from the American Graphophone Co.?

A. The American Graphophone Co. manufactured the machine, the Columbia Phonograph Co. sold them. The machine was invoiced to Hawthorne & Sheble by the Columbia Phonograph Co. The Columbia Phono. Co. was merely a selling organization for the manufacturing company styled the American Graphophone Co.

Q. 261. When did Hawthorne & Sheble purchase this Graphophone Grand talking machine?

A. As near as I can fix the date, in 1898.

Q. 262. You testified that Hawthorne & Sheble made two megaphones for the U. S. Navy. Since giving that testimony, have you been able to find any literature of Hawthorne & Sheble or Hawthorne & Sheble Mfg. Co. showing a large horn made and offered for sale by them?

A. I have.

XQ. 263. Will you please produce it?

A. The catalogue I produce and call attention to the cut on the back cover and also cut and descriptive matter on p. 11. The cut was made from a photograph. The workman was one of our employees and

(Deposition of Ellsworth A. Hawthorne.)

the photograph indicates the size of the horn in comparison to the workman. [548]

Q. 264. On p. 11 below the photograph of the horn and the workman are these words "height 9 ft., width of bell 3 ft., 6 inches." What do these words mean?

A. They indicate that the horn in its extreme length is 9 ft.; that the width or diameter of the bell is 3 ft., 6 inches.

XQ. 265. Above the photograph of the horn and man are these words; "This horn is only made to order. It is perfect in every detail. The top is made of brass and the bell spun out of copper, price \$150.00." Please state whether Hawthorne & Sheble Mfg. Co., ever made such a horn of brass and if so, what the construction thereof was.

A. Yes. They made a horn 9 ft. in length with bell 3 ft., 6 inches wide at the largest diameter. The bell was constructed of sections of copper, seamed together, and the sections of copper were cut wide at one end, narrow at the other, tapering and several sections joined together. It would be impractical to manufacture a horn of the height indicated in the catalogue in any other manner.

Q. 266. Are the photographs of the horn and man shown on the back of the cover and on p. 11 of the catalogue which you produced photographs of the the horn which you say the Hawthorne & Sheble Mfg. Co. made?

A. Yes, the cuts are made from a photograph.

Q. 267. How was the large end or bell of the horn, which you say was made of tapering sections of cop-

(Deposition of Ellsworth A. Hawthorne.)

per joined together, secured to the other part of the horn? A. With a seam.

Q. 268. Please state what were the comparative lengths of the large or bell part of the horn and of the other part of the horn, which you say were joined by a seam?

A. The exact dimensions I do not recollect. But in practice of manufacturing similar but smaller types of horns the bell, as a rule, is about one-half in depth in inches of the diameter of the horn. This particular horn, however, I am inclined to think was provided [549] with a very deep bell and the proportions may have been different than as applied to smaller types of horns.

Q. 269. Measuring on the photograph shown on the back of the cover of the catalogue that you have produced it appears that the distance from the extreme end of the bell to the upper line of the band where the handle appears is to the distance from said upper line of the band to the top of the horn as one is to two and a half ($1 : 2\frac{1}{2}$). According to this, the length of the bell would be $2 \frac{4}{7}$ ft. and the length of the rest of the horn would be $6 \frac{3}{7}$ ft. Are such measurements, founded upon the photograph, correct?

A. Undoubtedly.

Q. 270. On p. 11, it is said that the bell was spun out of copper. What did the spinning there referred to consist of?

A. The word "spun" as used in the descriptive matter in the catalogue has no bearing whatever on

(Deposition of Ellsworth A. Hawthorne.)

the construction of the horn, In some of our catalogues we stated that full-spun horns are made seamless but they were not; they had seams in them. It would be impractical to spin the bell for a horn as large as that shown in the catalogue. Spinning lathes are, as a rule, made for diameters not exceeding 8 or 10 inches; and I know of no spinning lathe in the country that would accomodate a bell of the size shown in the catalogue.

Q. 271. What became of the horn which you made 9 feet high with a bell 3 feet, 6 inches wide, shown in the photographs?

A. I am not certain how many of these horns were made, but they were made and sold for exhibitors' purposes, the idea being to create the impression that it was the loudest talking machine in the world and the horn was used at the exhibition as an advertising medium. We sold horns of this type to exhibitors; and I am under the impression that our own exhibiting Co. used a horn of this type.

Q. 272. On the cover of this catalogue the New York address of the [550] Hawthorne & Sheble Mfg. Co., Inc., is given as 297 Broadway, New York. When was it that the Hawthorne & Sheble Mfg. Co. had a place of business at 297 Broadway, New York?

A. In 1900 and the early part of 1901.

Q. 273. When did the Hawthorne & Sheble Mfg. Co. give up its place at 297 Broadway, New York?

A. My impression is it was the early part of 1901.

Q. 274. When did Hawthorne & Sheble Mfg. Co. publish this catalogue which you have produced,

(Deposition of Ellsworth A. Hawthorne.)

showing the photographs of the large horn with a man standing beside it?

A. As near as I can connect any dates, the latter part of the year 1900. It may have been the early part of 1901. However, the man who took the photograph left our employ late in 1900 or very early in 1901.

Q. 275. You have spoken of fiber horns made by Hawthorne & Sheble. Do you find any fiber horn shown in this catalogue?

A. On p. 12 are shown illustrations of fiber horns.

I have previously testified that Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co. manufactured fiber horns that were tapering throughout their entire length, of similar model to the Kaiser horn as shown in the cut under which is printed the words "reproducing horn No. 201."

These horns were made in the first instance by Hawthorne & Sheble of fiber strips tapered throughout their entire length and we also constructed them by joining the tapered sections together with bookbinders' cloth. Afterwards we made reproducing horns by a method and advertised them as "seamless."

We always tried to impress our customers with the fact that if a horn was made without ribs, without seams, but in built-up sections that the seams would practically be eliminated when the horn was a small horn. We pushed that idea for years but we lost out [551] eventually because of the cheapness of the construction of the horn with seams or

(Deposition of Ellsworth A. Hawthorne.)

longitudinal ribs. A horn constructed with longitudinal ribs or seams either by lap-seaming and solder or by use of tools such as an edging machine and a grooving machine can be constructed for about .1 the cost of a horn of similar size and same materials "seamless."

Q. 276. How does the fiber reproducing horn No. 201 illustrated on p. 12 of the catalogue compare with the aluminum horns made of tapering strips which were made by Hawthorne & Sheble, with respect to the lines of the two horns?

By Mr. DUNCAN.—Objected to as leading.

A. The aluminum horns had a similar appearance in that they were tapered throughout their entire length and the large end was circular in form as shown in the cut illustrating the fiber reproducing horn. The smaller end of the aluminum horn was fastened to a tube. These tubes varied in length and diameter according to the character of the type of machine they were to be used on.

Q. 277. Can you select any horn in this room which will illustrate the aluminum horns made by Hawthorne & Sheble?

By Mr. DUNCAN.—Objected to as leading.

A. This horn with this type of bell.

By Mr. HICKS.—The witness referred, when saying "this horn" to "Defendant's Exhibit, Model of Hawthorne & Sheble's Aluminum Horn Made by Mr. Lawrence from the Testimony of Frank H. Stewart" and to a Kaiser horn when saying "with this type of bell."

(Deposition of Ellsworth A. Hawthorne.)

The WITNESS.—(Continuing.) This type of horn here illustrates the idea of our fiber horn with the bookbinders' cloth connecting the sections together. These horns were made for us by one of our workman, Gorge Kunstle.

By Mr. HICKS.—In this instance, the witness referred to “Defendant’s Exhibit, Model of Horn Made in Accordance with Fig. 14 and the Description of Turpin’s French Patent No. 318,742 of Feb. 17, 1902.” [552]

Q. 278. Is there any statement in the catalogue which you have produced with regard to seams of the full-spun brass horns made by Hawthorne & Sheble?

A. Yes, on p. 7 at the top of the page is printed the following words:

“made throughout without seams, excepting 56-inch horn which has seam around bell.”

All these horns were made with seams. The statement that they were made “without seams” is wrong. We gave the horns a finish that hid the seams, brazing, soldering, etc., because we advocated expensive horns of this type to our trade, and as the seams could not be seen on account of the finish given the horn we advertised them “without seams.” It would be impractical mechanically to make horns 42 inches in length with bells 14½ and 24½ inches in diameter without having seams in the horns.

Q. 279. What was the reason of the exception of 56-inch horn on p. 7 of the catalogue?

A. We made 56-inch horns with and without a

(Deposition of Ellsworth A. Hawthorne.)

seam at a certain distance from the large end of the horn. The main reason was due to the extreme high cost of the metal and for a 56-inch horn we had to cut many more sections of metal and join them together with seams in comparison to the smaller types of horns.

Q. 280. Comparing p. 7 of the catalogue which you have just produced with p. 33 of the catalogue of Hawthorne & Sheble, which has already been introduced in evidence, please state whether the horns shown on these two pages of the two catalogues mentioned are the same horns or different horns.

A. They are the same with the exception that the 56-inch horn shown on p. 33 of the Hawthorne & Sheble catalogue illustrates a 56-inch horn without a seam at the base of the bell. The first so-called full-spun, all-brass horns made for Hawthorne & Sheble by La Forrestier and Son were made without a seam around the bell; later Hawthorne [553] & Sheble when they manufactured the so-called full-spun, all-brass horn varied the construction by making the bell of separate sections of metal and joining same to the body of the horn.

By Mr. HICKS.—The catalogue just produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Catalogue of the Hawthorne & Sheble Mfg. Co. of 1900-1901, Frank Z. Demarest, Examiner.”

Q. 281. Please state whether it was the custom of the Hawthorne & Sheble Mfg. Co. and of its predecessor, Hawthorne & Sheble to number the horns

(Deposition of Ellsworth A. Hawthorne.)

made and sold by them. A. It was.

Q. 282. Can you state whether any such numbers as O 3524 and O 2824 were used ; and if so, what those numbers indicated.

A. The zero indicated that the horns were silk-finished.

Q. 283. Did the figure "2824" have anything to do with the characteristics of the horn?

A. O 2824 was a flower horn.

Q. 284. How about O 3024?

A. Also a flower horn.

Q. 285. Have you anything from which you can refresh your recollection in regard to these figures?

A. I have some pages numbers 19, 20, 15 and 16 of an old price-list.

Q. 286. And do the figures about which we have been talking appear on p. 20? A. Yes.

Q. 287. On the same page 20 under the heading "Silk-finished horns as follows" is the number O 2820 Victor K. Can you state what kind of horn is there referred to?

A. The "O" indicated "Silk-finished horn." The "28" indicates the length of the horn ; "20" indicates the diameter of the bell of the horn, or large end of same.

Q. 288. Can you state what "Victor K" refers to in connection with "O 2820"?

A. My recollection is that it was a letter assigned to a certain type of machine manufactured by the Victor T. M. Co. or its predecessor.

Q. 289. Whose price-lists were these on pp. 15, 16,

(Deposition of Ellsworth A. Hawthorne.)

19 and 20, which you have just produced? [554]

A. They were from a price-list published by Hawthorne & Sheble Mfg. Co.

By Mr. HICKS.—The pages produced by the witness are offered in evidence and marked “Defendant’s Exhibit, Price-list pp. 15, 16, 19 and 20 of Hawthorne & Sheble Mfg. Co., Frank Z. Demarest, Examiner.”

Direct examination closed.

XQ. 290. When and where did you get the pages just offered in evidence, pp. 15, 16, 19, and 20?

A. They were handed to me by one of my employees yesterday. I had made a request to a number of my employees that have been in my employ for several years to see if they could find any of the literature published either by Hawthorne & Sheble or Hawthorne & Sheble Mfg. Co.

XQ. 291. Where are the other pages making up this price-list? A. I do not know.

XQ. 292. Have you seen the other pages of this price-list recently? A. I have seen similar pages.

XQ. 293. When and where?

A. I cannot state that they were the identical pages but similar pages in similar price-lists at my home.

XQ. 294. Can you, without reference to the pages of the price-list produced by you, state the construction and description of any given number of horns?

A. I could try.

XQ. 295. For example, what was the shape and construction of the horn that bore the number O 42,249?

(Deposition of Ellsworth A. Hawthorne.)

A. "O" indicated silk finish; "42," 42 inches in length; "24" indicated the diameter of the bell or the horn at the largest end. This horn evidently was made with a bell fastened or seamed or brazed or soldered or reamed to the top or upper portion of the horn and the "9" would indicate the depth of the bell.

Q. 296. Can you produce a complete price-list of which pp. 15, 16, 19 and 20 already produced by you are a part?

A. I do not think so as I am not positive they are in existence. [555] I have no knowledge to that effect.

XQ. 297. How did it happen that you got only these four pages and not the others?

A. Because practically the only type of horn constructed in later years has been of the flower type in the cheaper patterns or styles. It was probably preserved for the flower horn information.

Q. 298. Your idea is then that the reason that only these pages were produced is that the other pages had nothing to do with horns?

A. They may have had but my impression is that they deal with accessories such as diaphragm-glasses, carrying-cases, horn-stands and articles that were not manufactured by Hawthorne & Sheble Mfg. Co. in the Bridgeport factory.

XQ. 299. Is the only explanation you can give for the production of only pp. 15, 16, 19 and 20 of this price-list that these were the only pages of the price-list dealing with horns?

(Deposition of Ellsworth A. Hawthorne.)

A. I made an inquiry among my employees to see if they could find any information in particular about flower horns, and these pages were handed to me.

XQ. 300. Have you seen the other pages of the price-list from which these pages 15, 16, 19 and 20 were taken? A. There were other pages.

XQ. 301. Where are they now?

A. I do not know.

XQ. 302. Where did you see them?

A. There were other pages relating to carrying-cases, horn-stand, etc.

XQ. 303. When did you see those pages?

A. I saw them yesterday.

XQ. 304. Did those pages have anything to do with horns? A. They may have.

XQ. 305. Who removed these pages 15, 16, 19 and 20 from the other pages of the price-list?

A. The workman who handed the pages to me.

XQ. 306. And where are the remaining pages now?

A. I do not know; possibly he has them. [556]

XQ. 307. What did you do with the remaining pages after you looked over them?

A. I don't recollect looking over them; the workman handed me these pages.

XQ. 308. How do you know that the other pages related to various accessories and not to horns?

A. They may have related to horns; the reason that I stated the other pages related to accessories was because, if my memory serves me well, I had the price-list arranged years ago.

XQ. 309. When you saw these other pages yester-

(Deposition of Ellsworth A. Hawthorne.)

day did you look them over to see what they contained? A. No.

XQ. 310. Were you interested to see what the other pages referred to?

A. Not particularly, because I had asked this party to try and produce something that was principally about flower horns. If the price-list contained other information about horns it was such as is covered in the catalogues that have already been submitted by me and probably covered full-spun horns, brass horns, aluminum horns, B. & G. horns, and all kinds of horns, the same as all Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co.'s catalogue and price-lists covered.

XQ. 311. You mean to say that all of the price-lists of the Hawthorne & Sheble Mfg. Co. illustrate full-spun brass horns?

A. Not in later years because the sale dropped off on account of the high prices asked for that type of horn as compared to the more cheaply constructed types such as the B. & G. or the hammered brass horn.

XQ. 312. Did you ask the workman who gave you these pages whether they were the only pages that had any reference to flower horns?

A. He handed me the pages. I thanked him for them; I was not interested in the balance as I wished to obtain some printed information in regard to flower horns.

XQ. 313. How do you know that the other pages did not contain printed [557] information in regard to flower horns?

(Deposition of Ellsworth A. Hawthorne.)

A. Because he told me that this was the reference to flower horns that I had asked for.

XQ. 314. Did you ask for some particular reference to flower horns? A. Yes.

XQ. 315. Exactly what was it that you asked that workman to get you; a printed statement in some catalogue or price-list?

A. I told him that I wanted to connect the lettering, for instance, the letter "O" or figure "O."

XQ. 316. Do I understand that you yourself made no examination of the remaining pages of this price-list? A. I had no occasion to.

XQ. 317. I again ask you whether it is a fact that you made no examination of the remaining pages of the price-list from which these pages 15, 16, 19 and 20 were taken? A. I did not.

XQ. 318. Those remaining pages may contain other reference to flower horns, may they not?

A. The workman handed me what I asked for. Possibly they did. I was after information in regard to the letter "O."

By Mr. DUNCAN.—The offering in evidence as an exhibit for defendant of pp. 15, 16, 19 and 20 of the price-list referred to is objected to as insufficiently proven and as being only part of a document the whole of which should be produced; and all the testimony of the witness in regard to the flower horn referred to in the latter part of his deposition this afternoon is objected to on the ground that it is based upon the pages produced, that have not been properly proven and are incompetent evidence; and a motion

(Deposition of Ellsworth A. Hawthorne.)

is now made to strike the exhibit and the testimony in question from the record.

XQ. 319. Have you any objection to producing the remaining pages of this price-list?

A. None, whatever.

XQ. 320. Will you send the same to defendant's counsel for examination by complainant's counsel?

By Mr. HICKS.—Objected to as not directed toward any fact. Moreover the entire matter is immaterial, the only question is to what kind of horns these pages referred to as foundation for further testimony. [558]

A. I do not know whether the balance of the pages are in existence or not.

XQ. 321. If they are in existence will you send them to defendant's counsel for inspection by complainant's counsel?

A. I will try and produce them.

XQ. 322. When and where did you obtain the Hawthorne & Sheble Mfg. Co.'s catalogue that was offered in evidence this afternoon?

A. I found it among some old papers.

XQ. 323. Who underscored in red ink certain words on pp. 7, 11 and 12 of this catalogue?

A. I did. I underscored them to call Mr. Hick's attention to them when I wrote him about the catalogue.

XQ. 324. When did you underscore these words?

A. I believe it was two days ago, 3 days ago, possibly.

XQ. 325. At p. 5 of this catalogue are the words

(Deposition of Ellsworth A. Hawthorne.)

"Hammered brass horns with spun bells." Were the bells of these horns full-spun or not?

A. Yes, they were in many instances. Smaller bells were drawn in draw presses.

XQ. 326. Were the larger bells of the hammered brass horns with spun bells spun as stated at p. 5 of this catalogue? A. Up to certain sizes.

XQ. 327. On p. 6 of the catalogue appear the words "Special Hammered Brass Horns, Flaring Spun Bells." Were the bells of these horns spun or not?

A. The bells referred to as the flaring bell horn were bells made out of strips of metal, wide at one end, narrow at the other, tapering throughout their length and brazed together.

XQ. 328. Do you mean to say that this method of construction was used with the 24-inch horn with a bell of 13 inches?

A. No, not if the horn was a hammered brass horn.

XQ. 329. Did you mean to say that the construction of a bell that is described in your answer to XQ. 325 was present in the special hammered [559] brass horn 30 inches long with bell of 16½ inches wide?

A. It was customary to spin the bells for hammered brass horns with bells 16½ inches wide.

XQ. 330. Do you mean to say that the sectional construction described by you in answer to XQ. 325 was used in the special hammered brass horn 42 inches long with 20-inch bell?

A. We made some bells with that construction when we first manufactured because we did not have

(Deposition of Ellsworth A. Hawthorne.)

the tools for making the bell otherwise.

XQ. 331. Did you make any spun bells 20 inches in diameter for 42-inch horns?

A. Of the shallow bell type, yes.

XQ. 332. On p. 7 appear the words, "Bell spun-brass horns made throughout without seams excepting 56-inch horn has seam around bell." Am I correct in understanding that the first part of this statement, namely, "made throughout without seams," is not correct? A. It is positively incorrect.

XQ. 333. Do I understand that it was intentionally incorrect because you wanted to give the impression that there were no seams in your horns?

A. We had several reasons. That was one of them; another was that we did not care to publish to the public our methods of manufacture. The more mystery there is around manufacturing and the greater impression that you can create that you have something wonderful the better prices follow.

XQ. 334. Did you feel justified, in order to maintain the mystery in regard to your horns, to make misstatements concerning the same in your catalogues? A. Certainly.

XQ. 335. Why, if you wished the public to believe that there was no seam in your so-called full-spun brass horns did you state, at p. 7 "excepting 56-inch horn has seam around bell"?

A. I have previously stated that we made that type of horn with and without seams. The horns manufactured in the early days of [560] Hawthorne & Sheble of the so-called full-spun type were made

(Deposition of Ellsworth A. Hawthorne.)

without seams or bands around the bell; later we used a band and a seam and so stated in our later catalogues.

XQ. 336. Why did you not finish this seam around the bell like the longitudinal seams so that it could not be seen by the public and why did you not state as to this horn that it was made throughout without seams?

A. On account of the expense of making the horn. It would be made that way.

XQ. 337. Can you not finish this circular seam around the horn so that it would be as invisible as the longitudinal seam? A. Not as well.

XQ. 338. Why not?

A. Because of the difficulty of connecting the bell to the body of the horn, the seam would be more likely to show. Our first 56-inch horns, the so-called full-spun horns, were made out of long strips of metal, tapered at one end, narrow at the other, curved throughout and brazed together. We adopted the latter type of manufacture on account of its cheapness. We were cutting costs.

XQ. 339. You referred in your catalogue to silveroid horns with spun bells. Please state whether the statements in your catalogue that these silveroid horns have "spun bells" were correct.

A. The statement is correct.

XQ. 340. You also spoke of "aluminum horns with spun bells, very attractive in appearance, will not tarnish." Please state whether these statements are correct.

(Deposition of Ellsworth A. Hawthorne.)

A. Some types of horns were provided with spun bells of aluminum and other bells were drawn in draw presses. Other aluminum horns were made of the flower type with longitudinal seams practically of bell like the flower horn.

XQ. 341. Did you make an aluminum horn 18 inches long with a bell of 11 inches in diameter?

A. Possibly we did; we made all sizes. [561]

XQ. 342. Was that horn used as a reproducing horn?

A. It could be used both ways, as a recording and as a reproducing horn.

XQ. 343. Do you remember what your "large reproducing N" was?

A. It may have related to a Bettini type of reproducing or it may have been an Edison. Edison at one time lettered his reproducers, if I recollect correctly; or he lettered his machines.

XQ. 344. Did you make any all-aluminum horns for the Columbia Graphophone Grand Machine?

A. I did.

XQ. 345. On whose order?

A. Probably the Columbia Phono. Co.; it may have been on the American Graphophone Co.'s order blank. We had direct relations with both companies.

XQ. 346. Have you any definite recollection of the horns that you made for the American Graphophone Co. or Columbia Phonograph Co.? A. Fairly so.

XQ. 347. Did you make any horns for the Graphophone Grand that had a conical stem or body made out of one piece of aluminum and a flaring bell that

(Deposition of Ellsworth A. Hawthorne.)

was connected to the conical body?

A. We made aluminum horns for the Columbia Co. or possibly, American Graphophone Co., that had tube connections at the smaller end of varying lengths and diameters, according to the type of machine or use they were to be put to.

XQ. 348. My question related or was intended to relate to Graphophone Grand. Will you please confine yourself to that machine and answer the question.

A. We made them for the Graphophone Grand.

XQ. 349. Of what size did you make all-aluminum horns for the Graphophone Grand?

A. I do not recollect the exact dimensions.

XQ. 350. Did you make them in more than one size for that machine?

A. The type of horns that were made for them were connected at the small end with a large Graphophone Grand reproducer. I think the diameter was about an inch and a half at the smallest end. The [562] tube portion connecting with the upper ribbed portion was probably 10 or 12 inches in length.

XQ. 351. Is it not a fact that your firm or the Hawthorne & Sheble Mfg. Co. discovered a difficulty with its all-metal horns because of unpleasant and confusing sound made by the metal?

A. I have answered a similar question before. I can only reiterate what I previously stated. Opinions are largely personal in regard to the character of reproduction. We made horns for our customers. We made any and all kinds according to the wish of the customer. If they wanted them in aluminum we

(Deposition of Ellsworth A. Hawthorne.)

made them; in brass, likewise. My personal preference is for a 56-inch so-called full-spun concert horn which was one of the first horns ever designed by me. I believe it was in 1894 or 1895.

XQ. 352. Is it not a fact that your firm or the Hawthorne & Sheble Mfg. Co. recognized that the all-metal horns created confusing tones that you thought ought to be remedied if possible?

A. At a certain time Mr. Asa Vandergrift of the firm of Scheip & Vandegrift of Philadelphia brought to my office in Philadelphia a wood horn and stated that he had a horn that would beat the metal horn and put it out of business. It was so much superior.

I told Mr. Vandegrift that that was bunco; that I did not think his wood horn was as good as a metal horn and I asked him to turn his back while the machines were being operated and to pick out his wood horn, which he claimed was so superior. I used for that purpose a horn of metal, brass, and the seams were brazed. Mr. Vandegrift listened to a number of selections. I asked him to designate each time that I operated the machine, to state whether I was reproducing a record with a wooden horn, his sample, or an all-brass horn which I had shown to him before making the test. Mr. Vandegrift made his selections, designating, as he thought, which horn was reproducing. When I finished the demonstration I asked him, "What [563] horn am I using now as I am completing the record?" He stated, "You cannot fool me. That's my horn." I asked him to turn around and look at it. He did so. It was the all-metal horn.

(Deposition of Ellsworth A. Hawthorne.)

His excuse was that he would bring his partner up; he was a musician or understood music, had a musical ear; and he, his partner, would show me quickly which was which or indicate them with his back turned. Mr. Vandegrift at that time proposed to me that our concern handle his wooden horn exclusively or become, in other words, exclusive agents for it; but I told him that I did not think we would care to undertake the proposition. The horn was too expensive, bulky and it did not improve the reproduction to my idea.

XQ. 353. Now, will you please answer my question whether it is not a fact that your company recognized that the all-metal horn produced certain undesirable and confusing tones?

A. I don't think so, not if the horn was correctly constructed.

XQ. 354. Is it not a fact that your company undertook, in 1903 or thereabouts, to remedy the confused and unsatisfactory production of sound from the all-metal horn?

A. Our Co. applied for a patent on a horn covered with bookbinder's cloth, which was designated as silk-finish horns. We had some difficulty in securing the patent because the Patent Examiner said he could not detect any difference between the ordinary type of horn and the silk-finish. Mr. Sheble, who obtained the patent, told me he had a difficult experience in trying to convince the Patent Examiner that the horn really had merit. Frankly, I don't think the silk finish improved the horn one whit, unless it happened

(Deposition of Ellsworth A. Hawthorne.)

to be that the horn was not correctly constructed mechanically, such as loose seams or imperfect workmanship, when it would be likely that the cloth covering would eliminate any disturbance in the reproduction, from such imperfect workmanship.

XQ. 355. Your Co. did obtain a patent on the so-called silk finish of phonograph horn, did it not?
[564]

A. I believe the patent was issued to Mr. Sheble and by him assigned to Hawthorne & Sheble Mfg. Co.

XQ. 356. This is a copy of the patent in question, is it not, No. 759,639, patented May 10, 1904, application filed July 21, 1903, by Horace Sheble, assignor to Hawthorne & Sheble Mfg. Co.?

A. The patent information is correct. One main object Hawthorne & Sheble Mfg. Co. had in placing this horn on the market was to improve the appearance of the horn and to obtain a better price for their wares.

XQ. 357. I call your attention to the following language appearing at lines 35 and following of the patent in question:

“In horns for the purpose noted it has hitherto been customary to construct them of either polished brass or bronze throughout their entire length or to simply have them polished at their mouth or bell, while covering with black japan or other similar material the body or conical portion. To those accustomed to the use of machines for reproducing sound it is well known that hitherto there has always been present an ob-

(Deposition of Ellsworth A. Hawthorne.)

jectionable metallic note produced by the machine when in operation, due in a great measure to the fact that the vibrating column of air within the horn sets in vibration the metal of the horn itself, which in turn causes vibrations of air, so as to give rise to the objectionable note or tone mentioned. I have found, however, that by covering the body or conical portion of the horn with a layer of cloth, preferably adherent to the horn, the quality of the sound reproductions is greatly improved and that with the entire absence of the objectionable metallic sound heretofore always present."

and ask whether the statements here quoted are true or not.

By Mr. HICKS.—Objected to as not proper cross-examination. Complainant's counsel has been cross-examining the witness for a considerable time upon matter not touched upon in the direct examination. The statements of Mr. Sheble in the patent in question can have no bearing whatever upon the examination of Mr. Hawthorne.

A. I don't think there was much in Mr. Sheble's claim because I can't say we made a fortune out of the sale of silk-finished horns. My recollection is that we cleaned out a large amount of the product in the process of manufacture and material for the silk-finished horn by putting it in the scrap pile. [565]

XQ. 358. Do you class the statements made in the patent in question in regard to the prevention of the objectionable metallic note in the horns previous to

(Deposition of Ellsworth A. Hawthorne.)

your silk-finish horn as in the same incorrect class as the statements in your catalogues?

A. I will not attempt to assert that my opinion in this respect is all-pervading. Mr. Sheble and I frequently differed about certain types of horns. I told him that I would not give him a hoot for a silk-finished horn as compared to my pet, the so-called all-brass, full-spun 56-inch concert horn. We often had arguments about it. He stuck to his point; I stuck to mine. I am still of the same opinion. I have no doubt that Mr. Sheble may be as insistent about his invention, the silk-finish horn, as I am of my conception of the 56-inch so-called full-spun concert horn.

XQ. 359. Is it not a fact, however, that after obtaining the patent in question, your Co. advertised the advantages of the silk-finish horn as preventing the objectionable metallic note always present in horns previous to your silk-finished horns?

A. Why not? We had a patent on a horn, something difficult to obtain because horns are nothing more than ordinary funnels.

XQ. 360. It is a fact, is it not, that you had advertised your silk-finished horn as having the advantages referred to in the last question?

By Mr. HICKS.—Objected to as calling for secondary evidence and not proper cross-examination.

A. Undoubtedly, we did.

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 361. Did Hawthorne & Sheble Mfg. Co. sell

(Deposition of Ellsworth A. Hawthorne.)

flower horns according to the figures set forth in pp. 15, 16, 19 and 20, setting forth list prices?

A. They did.

Redirect examination closed.

Deposition closed.

Signature waived. [566]

Oct. 11, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

**[Deposition of Eugene Henry Byrnes, for
Defendant.]**

EUGENE HENRY BYRNES, being sworn as a witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 1. Please state your name, age, residence and occupation.

A. Name, Eugene H. Byrnes; age, 43; residence, 212 Poplar St., Bridgeport, Conn.; occupation, tool maker employed by the American Graphophone Co.

Q. 2. How long have you been employed by the American Graphophone Co. and at what place or places?

A. Since December 12, 1898, I have been employed at the American Graphophone Co. as a tool maker and later as a foreman of the laboratory experimental department.

Q. 3. Do you know the Graphophone Grand talking machine made and sold by the American Graphophone Co.?

A. I know of, have seen it, worked on it.

Q. 4. When did you first see a Graphophone Grand

(Deposition of Eugene Henry Byrnes.)

talking machine and where?

A. At the factory of the American Graphophone Co. on December 12, 1898, at Bridgeport, Conn.

Q. 5. What horn or horns were used on the Graphophone Grand talking machine at Bridgeport, Conn.?

A. I know that they were putting out a 10-inch brass horn to start with. I later saw a larger horn on a Grand machine in Mr. McDonald's back office.

Q. 6. When was it that you saw this larger horn on the Graphophone Grand machine in Mr. McDonald's back office?

A. I cannot state the exact date but I would say that it might be in February or March, 1899.

Q. 7. Were you acquainted with Mr. William E. Parker? A. Yes, sir.

Q. 8. Was Mr. Parker at work in the factory of the American Graphophone [567] Co. at Bridgeport, Conn., when you saw this larger horn on the Graphophone Grand in Mr. McDonald's back office?

By Mr. DUNCAN.—Objected to as leading.

A. Yes, sir.

Q. 9. Do you know what Mr. Parker's duties were at that time?

A. He was a tool maker, also doing the inspecting of the Graphophone Grand.

Q. 10. Please describe this larger horn on the Graphophone Grand machine, that you saw in Mr. McDonald's back office in February or March, 1899.

A. The horn appeared to me to be stubby, short. The reason I say this is we were accustomed to seeing the long 56-inch brass horn, and this horn seemed to

(Deposition of Eugene Henry Byrnes.)

be so much shorter that I remarked it to a fellow workman.

Q. 11. About how long was this stubby horn?

A. As I could judge now it would be about 36, 38 inches long.

Q. 12. Of what material was this horn made?

A. It was made of a white metal.

Q. 13. Please go on and describe what you recollect in regard to this horn of white metal.

A. I remember when I remarked to a fellow workman that it was a short stubby horn that his answer was that it looked like a lot of slats put together. We could not examine the horn closely on account of the possibility of Mr. McDonald's stepping into his back office. That is about all that I can think of just now.

Q. 14. What was your observation at that time in regard to the "slats" mentioned?

By Mr. DUNCAN.—Objected to as leading.

A. Why, the horn itself was something out of the ordinary. We were not acquainted with the appearance of such a horn. I personally had never seen anything like it before. [568]

Q. 15. Please state the construction and shape of this horn.

By Mr. DUNCAN.—Objected to as incompetent in view of the previous answers of the witness.

A. The horn seemed to have a large mouth or bell, as it were, tapering down at a curve to a certain point, I should judge about 8 inches from the small end. It appeared to be straight from that point to the small end.

(Deposition of Eugene Henry Byrnes.)

Q. 16. Please take this piece of paper and make a sketch of this horn of white metal, which you saw in Mr. McDonald's back office in February or March, 1899.

By Mr. DUNCAN.—Objected to as incompetent in view of witness's answer to Q. 15.

A. I have made the sketch requested.

Q. 17. Please number the sketch Fig. 1.

A. I have done so.

Q. 18. What does the series of lines which you have drawn from the end of the bell to the conical piece at the small end of the horn represent?

A. Those represent what I mean by slats formerly spoken of.

Q. 19. Of how many slats was the bell portion of this horn of white metal composed?

A. I could not state the exact number. I should judge 12 or 14.

Q. 20. Now please make another drawing, numbering it Fig. 2, showing the outline of each of the slats composing the bell of the white metal horn.

By Mr. DUNCAN.—Objected to as incompetent in view of the answer to Q. 15.

A. I have done so.

Q. 21. Now please make a third sketch, numbering it Fig. 3, showing the outline of the section or slat shown in Fig. 2, when looking at it from one side, as the section or slat would be when assembled in the horn.

By Mr. DUNCAN.—Same objection.

A. I have done so. [569]

(Deposition of Eugene Henry Byrnes.)

By Mr. HICKS.—The sketch made by the witness, consisting of Figs. 1, 2, and 3, is offered in evidence and marked “Defendant’s Exhibit, Byrnes’ Sketch of White Metal Horn seen in Mr. McDonald’s Room at Bridgeport, Conn., February or March, 1899, Frank Z. Demarest, Examiner.”

By Mr. DUNCAN.—Same objection.

Q. 22. What was this white metal of which this horn was composed?

By Mr. DUNCAN.—Objected to as leading.

A. The metal known as aluminum.

Q. 23. Did you afterwards see any other horns like this white metal or aluminum horn at the factory of the American Graphophone Co. at Bridgeport, Conn.?

A. I did.

Q. 24. Where were they and what, if anything, was being done with them?

A. On the loud machine called the Higham-o-phone while experimenting we used a similar horn but cut the end off so as to put it on the larger reproducing shank. On finding that the soft metal was splitting I personally riveted a brass tubing on to the horn.

Q. 25. When was it that you did this?

A. I should judge 4 or 5 years after originally seeing the horn previously spoken of, in Mr. McDonald’s back office.

Q. 26. Did you observe anything with respect to the packing or shipping of the white metal or aluminum horn at the factory of the American Graphophone Co. at Bridgeport, Conn.?

A. Yes. The laboratory was in one corner of the shipping department and it was necessary for me to

(Deposition of Eugene Henry Byrnes.)

pass through the shipping department. On several occasions I would stop and look at different horns while in the course of packing. I remember very well seeing several of those horns being packed.

Q. 27. When was it that you saw several of these white metal or aluminum horns being packed?

A. In the year 1899.

Q. 28. Do you know from whom the American Graphophone Co. has purchased horns for Grands?

A. I have no way of absolutely knowing. It is generally known that [570] they get horns from Hawthorne & Sheble Co. I know that they make horns; I have bought horns from them myself; I have worked in their plant and repaired tools for making horns.

Direct examination closed.

Cross-examination by Mr. DUNCAN.

XQ. 29. How did you fix the date of December 12, 1898, as the date when you entered the employ of the American Graphophone Co.?

A. I have it in a book that I keep my time in; also the pay-roll of the American Graphophone Co. gives the same date.

XQ. 30. Have you looked up the date recently?

A. Yes.

Q. 31. At whose request?

A. I wanted to make sure for my own satisfaction.

XQ. 32. You wanted to make sure in connection with your testimony you were to give here?

A. I was asked when I came to work for the company; I gave this date, December 12th, 1898, and

(Deposition of Eugene Henry Byrnes.)

went to the office and asked them if that date was right. They answered me, yes.

Q. 33. Who asked you to come here and testify?

A. Mr. William E. Parker asked me if I could remember 10 or 15 years back. I stated in regard to some matters of importance. Then he asked me if I remembered the Graphophone Grand; I answered yes because I started to work on them when I went to work at the Graphophone Co.

XQ. 34. How long did the American Graphophone Co. continue making the Graphophone Grand?

A. To the best of my recollection they discontinued billing the Grand in 1902. I do know that we occasionally build one now.

XQ. 35. Didn't your Co. advertise and offer for sale the Graphophone Grand in 1905?

A. I do not know.

XQ. 36. What horns were regularly supplied with the Graphophone Grand up to 1902, if you know?

A. They regularly supplied a 10-inch horn. [571]

XQ. 37. Was that horn made of a single sheet of brass? A. No.

XQ. 38. How was it made?

A. The bell was one piece, tapering down to the small end one piece.

XQ. 39. How long did the American Graphophone Co., to your knowledge, supply the 56-inch horn, that you have spoken of, with the Graphophone Grand?

A. I did not state that they supplied a 56-inch horn.

XQ. 40. Did your company supply a 56-inch horn with the Graphophone Grand?

(Deposition of Eugene Henry Byrnes.)

A. It could be attached to a Graphophone Grand.

XQ. 41. Were these 56-inch horns made of brass?

A. Yes, sir.

XQ. 42. Were such horns shipped during the first couple of years of your employ with the American Graphophone Co.?

A. Yes, sir, to the best of my knowledge.

XQ. 43. Just what were your duties during the first year or two of your employment with the American Graphophone Co.?

A. Tool maker in the experimental laboratory.

XQ. 44. Where had you been employed just before going to the American Graphophone Co.?

A. Union Metallic Cartridge Co., Bridgeport, Conn.

XQ. 45. When were you employed by Hawthorne & Sheble or the Hawthorne & Sheble Co.?

A. Three years ago.

XQ. 46. Where? A. At Bridgeport.

XQ. 47. What were your duties with that concern?

A. Foreman of the tool-room.

XQ. 48. Do I understand that you were employed with the American Graphophone Co. from Dec., 1898, to the time you entered the employ of the Hawthorne & Sheble Co.?

A. No, sir.

XQ. 49. How long did you continue in the employ of the American Graphophone Co.?

A. I do not recall the exact date.

XQ. 50. About how long? [572]

A. I have been out of their employ for 4 years, I believe that is about the time; I should say about 4 years, to the best of my memory.

(Deposition of Eugene Henry Byrnes.)

XQ. 51. About how many years did you remain with the American Graphophone Co. after you entered its employ in 1898?

A. About ten years.

XQ. 52. Are you acquainted with the so-called flower style of horn that has been sold on the market since 1905?

By Mr. HICKS.—Question objected to as arbitrarily fixing a date and amounting to testimony on behalf of complainant.

A. Slightly.

XQ. 53. Did not the Hawthorne & Sheble Mfg. Co. make such horns while you were connected with it?

A. They did.

XQ. 54. Was that horn made up of tapering panels joined together?

By Mr. HICKS.—Objected to as not proper cross-examination.

A. They were.

XQ. 55. Did you have anything to do with manufacturing flower horns while you were connected with the Hawthorne & Sheble Mfg. Co.?

By Mr. HICKS.—Objected to upon the ground that it does not appear that the witness was ever connected with the Hawthorne & Sheble Mfg. Co.

A. As a foreman of the tool-room I had charge of keeping their blanking tools repaired and frequently we had to sharpen them by grinding.

XQ. 56. Did you have charge of the sharpening or repairing of tools used by the Hawthorne & Sheble Co. in making those flower horns?

By Mr. HICKS.—Same objection.

(Deposition of Eugene Henry Byrnes.)

A. I have already stated that as foreman for the Hawthorne factory of their tool-room it was my place to keep their tools in perfect working order.

XQ. 57. And does this include the tools that were used for making the flower horns? A. Yes, sir.

XQ. 58. How long were you and your fellow workmen in Mr. McDonald's [573] back office when you saw the white metal horn concerning which you have testified on your direct examination?

A. I could not state the exact time in minutes. I should judge about two would be about what we could stay there.

XQ. 59. Why did you state on your direct examination that you could not examine the horn closely because of the possibility of Mr. McDonald's stepping into his back office?

A. Because he had a front office, a back office which was used for consultations, drawings, examinations of models, etc. There was a door leading from his back office into the laboratory proper.

XQ. 60. Did you and your fellow workman feel that you did not wish Mr. McDonald to see you examining his horn? A. We did.

XQ. 61. Why?

A. For the reason that we had no business in there at that time. I had been called into his front office and was passing through his back office into the laboratory. Noticing the horn being an unusual shape I remarked it to the so-called fellow-workman, Mr. Frank Osborne, and we opened the door and looked the horn over.

XQ. 62. Where was this white metal horn placed

(Deposition of Eugene Henry Byrnes.)

in the back office of Mr. McDonald's?

A. In the back office of Mr. McDonald.

XQ. 63. Was it on the floor or on his desk?

A. It was attached to a Graphophone Grand machine.

XQ. 64. Did you take it off the machine?

A. No, sir.

XQ. 65. Did you see any other style of horn on a Graphophone Grand at the Bridgeport factory of the American Graphophone Co. than the white metal horn you have referred and the 10-inch brass horns?

A. Yes, sir.

XQ. 66. What other kind of horn did you see on the Graphophone Grand at the Bridgeport factory?

A. I have seen most every style and shape of horn attached to the Graphophone Grand at different times during our experiments to get quality of horn. [574]

XQ. 67. In answer to Q. 5 inquiring what horn or horns were used on the Graphophone Grand at the Bridgeport factory of your Co. you stated in substance that you knew they were putting out a 10-inch brass horn to start with and that later you saw a larger horn on a Graphophone Grand in Mr. McDonald's back office. How was it that in making that answer you referred only to the larger horn that was made of white metal and not to other and different forms of horns which you now say were tried on Graphophone Grands in the laboratory?

A. It was generally understood that the 10-inch brass horn was a part of the equipment for the Grand machine. Knowing that it looked out of proportion to the machine we also knew that they were about to

(Deposition of Eugene Henry Byrnes.)

have a larger horn. The first time that I saw a larger horn other than the 56-inch horn attached to a Grand machine was in Mr. McDonald's back office.

XQ. 68. What I want to know is why, in answering Q. 5, you referred only to this white metal horn and not other large horns that were used on the Graphophone Grand, such as the 56-inch brass horn that you later referred to?

By Mr. HICKS.—Question objected to as not in accordance with what the witness said.

A. Because we had, in our laboratory, a 56-inch brass horn to experiment with on any machine we saw fit at any time but when I saw this peculiar looking horn which was out of the ordinary it attracted my attention. That is why I spoke of it to my fellow-workmen so that they would have a look at the new horn for the Grand machine. We did not know that that was the horn that was to be used on the Grand machine. All that we did know was that it was attached to the machine. We supposed, knowing from Mr. McDonald that he was about to have a larger horn for the Grand, we naturally supposed that this was the new horn for the Grand machine.

XQ. 70. As a matter of fact were not the 56-inch brass horns used with the Graphophone Grand in considerable number? [575]

A. They could be; may have been.

XQ. 71. Hadn't you seen them used on the Graphophone Grand? A. Yes, sir.

XQ. 72. How did you know that it was the larger horn of white metal that Mr. Hicks wanted you to talk about this morning?

(Deposition of Eugene Henry Byrneš.)

A. I did not know that that was the particular horn.

XQ. 73. How did you know it was a peculiar horn that he wanted you to talk about rather than the 56-inch horn?

A. Mr. Parker asked me if I remember anything in regard to the different horns used with the Grand machine.

XQ. 74. And what did you say in answer to Mr. Parker?

A. I answered him in this way: That they could use any horn that they saw fit. He says, "That is not the idea; I want to know what you saw on the machine at different times," and I laughed at him, saying that "You could use any horn on any machine so far as that was concerned"; so in our further talk he asked me if they did not use a 10-inch on it. I said, "Yes"; also a 56-inch horn. He asked me if I can bring to mind any other horn. I said, "Yes, there was a peculiar style horn that went out with the machine." He asked me if I could describe something with regard to the horn. Then I spoke to him about the remark to Mr. Osborne of the horn that was in Mr. McDonald's back room being a stubby, short affair and Mr. Osborne answered stating it looked like a lot of slats put together. That was the last I heard of Mr. Parker in regard to the horn except yesterday afternoon. He asked me if I would go to New York and state what I knew. I said yes.

XQ. 75. When did you first talk with Mr. Parker about horns used on the Graphophone Grand?

(Deposition of Eugene Henry Byrnes.)

A. Yesterday morning.

XQ. 76. And then yesterday afternoon he asked whether you would go to New York and give your testimony? A. Yes, sir.

XQ. 77. Can you state how the slats were fastened together in this white metal horn that you say you saw in Mr. McDonald's back office? [576]

A. No, I cannot.

XQ. 78. Can you state what the shape of the white metal horn you saw in Mr. McDonald's back office was?

A. Kindly make this question a little plainer.

XQ. 79. Describe the appearance of the bell end of the white metal horn as fully as you can.

A. I have a sketch here which shows it, to the best of my memory. (Witness refers to the sketch.)

XQ. 80. Your recollection was that the bell end of the horn was circular?

A. You mean that the horn was round?

XQ. 81. The bell end; did it form a true circle?

A. I cannot remember as to that.

XQ. 82. Was the bell end of the horn scalloped like some of the flower horns that have been put upon the market in recent years?

A. I do remember that point.

XQ. 83. Was the horn or any part of it finished with any lacquer or paint or decoration?

A. No, a plain white horn.

XQ. 84. How was the flaring or bell portion of the horn connected to the straight or conical portion?

A. I do not recollect.

(Deposition of Eugene Henry Byrnes.)

XQ. 85. Was there any solder used about this horn? A. I do not know.

XQ. 86. Were any of the parts brazed together in this horn? A. I do not know.

XQ. 87. Have you any distinct recollection as to the number of slats?

A. I have already stated that I did not remember the exact number but judge about 12 or 14.

XQ. 88. State what your recollection is as to the diameter of the bell.

A. To the best of my recollection, it may range from a foot and a half to two and a half feet.

XQ. 89. Did you personally have anything to do with the shipment of other horns that you think were similar to this one that you saw in Mr. McDonald's back office? A. No, sir. [577]

XQ. 90. Did you observe any of the other horns that you say you saw in the shipping-room closely enough to know how the bell portion was joined to the conical portion? A. No.

XQ. 91. Or how the slats were joined together?

A. No.

XQ. 92. Do you know whether these horns that you saw in the shipping-room were of different sizes?

A. They were of different sizes; I know that they were shipping different sized horns from time to time.

XQ. 93. No, I am referring to horns that you say you first saw in the shipping-room, that are similar to the white metal horn that you saw in Mr. McDonald's back room. Please state whether your under-

(Deposition of Eugene Henry Byrnes.)

standing is that these similar horns that you saw in the shipping-room were of different sizes.

A. To the best of my memory they appeared of the same size as the horn of which I spoke, in Mr. McDonald's back room.

XQ. 94. How do you fix the time when you saw the white metal horn in Mr. McDonald's back office as February or March of 1899?

A. Because it was shortly after I started to work for the American Graphophone Co.

XQ. 95. Did you cut off the end of the horn that you say they used with the Higham-o-phone some 4 or 5 years later than you saw the white metal horn in Mr. McDonald's office? A. Yes, sir.

XQ. 96. Who gave you the horn the end of which you cut off at that time?

A. It was in the room where Mr. Higham was experimenting with the Higham-o-phone.

XQ. 97. Did he ask you to cut off the tapering end?

A. No, sir. I wanted another horn and picked up this horn and cut the end off. After I had done so he seemed to be sorry that I had cut that horn up.

XQ. 98. Was the horn that you cut up at the time referred to decorated in any way?

A. Not that I remember. [578]

XQ. 99. Or how many panels or slats was that horn made?

A. As near as I can remember, 12 to 14.

XQ. 100. Did the horn you used with the Higham-o-phone have a flaring bell portion that was attached to a conical top?

(Deposition of Eugene Henry Byrnes.)

A. The question is not clear in my mind.

XQ. 101. How much of this horn did you cut off?

A. I should judge two or three inches.

XQ. 102. What was the shape of the part that you cut off? A. It was conical shape.

XQ. 103. How much longer than the two inches did this conical shape continue in this horn?

A. I should judge about six (6) inches.

XQ. 104. From that point to the bell of the horn what was the shape?

A. Increasing in diameter to the large end of the horn.

XQ. 105. Was the outer contour of the horn from the 8-inch point to the end of the bell curved or straight? A. Curved.

XQ. 106. How was this curved portion attached to the conical portion? A. I do not remember.

XQ. 107. Was the curved portion made up of one or more slats or panels? A. It was.

XQ. 108. How were these slats or panels connected with each other? A. I do not know.

XQ. 109. At what point on this horn used with the Higham-o-phone, did you find splitting of the metal?

A. On the small end.

XQ. 110. Was there any solder used on the horn that you experimented with with the Higham-o-phone? A. Not that I know of.

XQ. 111. How do you fix the date of the use of this horn on the Higham-o-phone?

A. I have not given any date; I have stated several years after seeing this white metal horn in Mr.

(Deposition of Eugene Henry Byrnes.)

McDonald's back room.

XQ. 112. Have you any clear idea of the number of years that elapsed after you entered the employ of the American Graphophone Co. before [579] you experimented with the horn on the Higham-o-phone?

A. No, it may be anywheres between four and six years.

XQ. 113. Did the edges of the slats overlap each other in the white metal horn you saw in Mr. McDonald's room? A. I do not remember.

XQ. 114. For how long a period after you saw this white metal horn in Mr. McDonald's room do you think you saw similar horns in the shipping-room?

A. About two months.

XQ. 115. What leads you to think that it was about two months that you saw similar horns in the shipping-room?

A. I can remember seeing them packing them; and, to the best of my belief and memory, it would be about two months.

XQ. 116. Didn't you remain in the laboratory for more than two months after you saw this white metal horn? A. Yes, sir.

XQ. 117. How long did you continue in the laboratory? A. About nine years.

XQ. 118. How long did the shipping-room remain in the location you have already described, adjoining the laboratory?

A. The shipping-room remained in the same location and is there now. The laboratory changed its

(Deposition of Eugene Henry Byrnes.)

location to the east building about one year after seeing this particular horn in Mr. McDonald's rear office.

XQ. 119. Why is it that you apparently think that the horn similar to this metal horn was seen by you in the shipping-room only for about two months instead of the year that the laboratory remained annexed to the shipping-room?

A. As workmen passing through another department than our own we did not spend much time in other departments. Therefore, after noticing that they were shipping horns that appeared to be duplicates of a horn seen in Mr. McDonald's rear office we simply lost interest and passed through the department as quickly as possible.

XQ. 120. Didn't you and your fellow-workman, Mr. Osborne, take enough interest in this white metal horn to examine some of the [580] similar horns that you say you saw in the shipping-room to see how they were constructed? A. No, sir.

XQ. 121. Your interest in the construction of this white metal horn ceased, did it, after you had made about two minutes' examination of the horn in Mr. McDonald's back office?

A. Yes, because as they were being shipped we would give them a passing glance. We had no chance to handle or cut them apart to see how they were manufactured.

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 122. Was Mr. Horace Sheble ever connected

(Deposition of Eugene Henry Byrnes.)

with the Hawthorne factory at Bridgeport, Conn., where you were employed?

A. Not to my knowledge.

RDQ. 123. The concern by which you were employed at Bridgeport, Conn., was the Hawthorne Mfg. Co., was it not?

A. It was. That is my mistake in saying Hawthorne & Sheble. We have always known them as Hawthorne & Sheble.

RDQ. 124. Is Mr. McDonald, in whose rear office you saw the white metal or aluminum horn in February or March, 1899, still living? A. No, sir.

RDQ. 125. When did he die?

A. About two or three years ago.

RDQ. 126. Who was the inventor of the Graphophone Grand machine?

By Mr. DUNCAN.—Objected to as calling for hearsay unless the witness has personal knowledge.

A. It is generally known that Mr. McDonald was the inventor of the Graphophone Grand; I personally do know that he improved the machine and, being in the laboratory, I was working on the Graphophone Grand improvements from time to time.

Redirect examination closed.

Deposition closed.

Signature waived.

Adjourned to 3 P. M.

RECESS. [581]

[Deposition of **Ellsworth A. Hawthorne**, for
Defendant.]

Oct. 11, 1913.

ELLSWORTH A. HAWTHORNE, a witness on behalf of defendant, being duly sworn, resumes the stand and testifies as follows:

Direct Examination by Mr. HICKS.

Q. 362. Please refer to plaintiff's exhibit for identification, p. 7 of the Talking Machine World for March 15, 1905, setting forth an advertisement of Hawthorne & Sheble Mfg. Co. and state what kind of horn was the horn numbered "F 0 3024."

A. "F 0 3024" was a flower horn 30 inches long with 24-inch opening or bell with silk finish on outside, inside hand decorated.

Q. 363. Does the advertisement before you show the shape or construction of the horn "F 0 3024"?

A. It does. The cut illustrating the horn attached to the phonograph illustrates the type of flower horn referred to.

Q. 364. For what machine was the horn "F 0 3024" made and sold by Hawthorne & Sheble Mfg. Co.?

A. For use on an Edison phonograph and similar types of cylinder machines.

Q. 365. Please refer to the same advertisement on p. 7 of the Talking Machine World for March 15, 1905, and state what was the horn numbered "F 0 2824."

A. "F 0 2824" was a flower horn for Victor tapering-arm machine, 28 inches long and with opening or bell 24 inches in diameter.

(Deposition of Ellsworth A. Hawthorne.)

Q. 366. Is the shape or construction of the horn "F 0 2824" shown in that advertisement?

A. The horn shown in the advertisement is very much the same, practically identical, except that the smaller end had a larger opening for the purpose of equipping the horns on the divers types of horn machine with tapering arms.

Q. 367. Please refer to plaintiff's exhibits for identification, which are p. 18 of the Talking Machine World for January 15, 1905, which was the first issue of that publication, as testified to by [582] you, and p. 4 of the Talking Machine World for February 15, 1905, and observe that reference is there made to catalogue No. 600 of Hawthorne & Sheble Mfg. Co. Please state whether the catalogue of the Hawthorne & Sheble Mfg. Co., bearing the No. "600," which you have produced and which has been offered in evidence, is the catalogue referred to in the two issues named of the Talking Machine World. A. It is.

Q. 368. Please refer to p. 4 of Hawthorne & Sheble Mfg. Co. catalogue No. 600 and to the back of that page, which bears the same page number, and state what was the horn "No. F 0 3024."

A. Flower horn for cylinder machine, 30 inches long with opening or bell 24 inches in diameter, silk finished.

Q. 369. Is the shape and construction of that horn illustrated on those pages numbered 4 and 4?

A. It is. It is shown on the first portion of p. 4.

Q. 370. Please refer to page numbered 5 of that

(Deposition of Ellsworth A. Hawthorne.)

catalogue and to the back of that page, which also is numbered 5, and state what was the horn numbered "No. F 0 2824."

A. "F 0 2824" is a flower horn for Victor tapering-arm machine, with silk finish, 28 inches in length and with opening or bell 24 inches in diameter.

Q. 371. Are the shape and construction of that horn illustrated on those pages numbered 5 and 5?

A. It is. It is shown in the cut.

Q. 372. Does that cut explain and show what you meant when you described the shape and construction of the horn numbered "F 0 2824" as set forth in the Talking Machine World, p. 7, for March 15, 1905? A. The same.

Q. 373. Pages 15, 16, 19 and 20, which you produced at the last session when you testified set forth, under the heading "Silk Finished Horns as follows":

"0 2824 flower \$6.00"

"0 3024 flower \$6.00" [583]

Please state whether p. 7 of the Talking Machine World for March 15, 1905, and pages 4 and 5 of the catalogue No. 600 refer to the same or to different horns referred to as set forth above on p. 20 of the four pages which you produced. A. The same.

Q. 374. Have you produced the remaining pages from which said pages 15, 16, 19 and 20 were taken and concerning which plaintiff's counsel cross-examined you to such an extent at the last session because you had not the forethought to apprehend the length of his cross-examination?

(Deposition of Ellsworth A. Hawthorne.)

A. I have. The front page is missing. However, I think these pages represent a portion of our price-list, published some time in 1905 or 1906.

Q. 375. From page 4 it appears that flower horn "F 0 3024" has a list-price of \$10.00; a price to the dealer of \$4.00 and a price to the jobber of \$3.50, these prices being printed. Above these prices is typewritten \$3.00. What does the typewritten price mean?

A. A special price to our distributors.

Q. 367. The same prices and the same typewritten price of \$3.00 appear on p. 5 with reference to the flower horn for Victor machine, numbered "F 0 2824." Does the same explanation apply?

A. The same explanation holds good.

Q. 377. Do these prices for the horns mentioned indicate anything with regard to the manufacture of such horns by Hawthorne & Sheble?

A. When the flower horn was first introduced by Hawthorne & Sheble Mfg. Co., made with scalloped edges, I do not now refer to glass horns with scalloped edges and also to the flower horns without the scalloped edges, we were laboring under great difficulty in their manufacture because the work had to be done by manual labor, by hand. The apparent large discount on the horns as indicated by the net quotation of \$3.00 shows a discount of 70 per cent. and this was due to our having perfected tools, blanking dies, special machines, spinning lathes, fixtures that enabled us to cut the costs [584] materially. According to my recollection we still had an inside

(Deposition of Ellsworth A. Hawthorne.)

price over the \$3.00. The typewritten figures or apparently typewritten figures were printed in the catalogue in imitation of typewriting. It is customary when reducing prices to the jobber or dealer or on increasing their discounts to allow the list prices to remain the same. This allows a wider margin of profit to both the dealer and the jobber; and the manufacturer, by improved methods and output, is enabled to also benefit by his efficiency.

By Mr. HICKS.—The pages of the price-list produced by the witness, Nos. 3-14, inclusive, and Nos. 17 and 18, are offered in evidence and marked "Defendant's Exhibit, pages of list prices, of Hawthorne & Sheble Mfg. Co., supplementary to pages 15, 16, 19 and 20, Frank Z. Demarest, Examiner."

Q. 378. Please look at the letter of Hawthorne & Sheble Mfg. Co., dated April 15th, 1904, set forth after the answer of Mr. William J. Elwell to Q. 15 of his deposition in this suit and state, after reading the same whether the reading of that letter refreshes your recollection.

A. It does. The letter is one that was issued by Hawthorne & Sheble Mfg. Co. and signed by Mr. Horace Sheble, who was the vice-president and treasurer of the Hawthorne & Sheble Mfg. Co. The letter has reference to flower horns with silk finish and indicates that they were made of long steel sections joined together and tapering throughout their length like the petals of a flower. When the Hawthorne & Sheble Mfg. Co. made an effort to place metal flower horns on the market with

(Deposition of Ellsworth A. Hawthorne.)

circular bells and with sections that were scalloped they had great difficulty in getting them down to a low cost owing to their making them by hand or by manual labor. It was about the time that this circular was issued that our special tools, fixtures and machines were completed, by the aid of which we were able to place the flower horn with or without scalloped edges on the market at reasonable prices.

We made flower horns for a long period preceding the completion of such tools and fixtures. It has always been my impression that [585] we made the steel flower horn with scalloped edges in 1903. Of course, we made the glass horn in imitation of flowers a considerable time preceding. The circular states that for over a year previous to April 15th, 1904, we were engaged in working on new model horns and also states that the new horns will be known as "the flower silk finish horns." The letter or circular would seem to attest to the correctness of my impressions that we had made such horns for at least a year previous to April 15, 1904.

By Mr. DUNCAN.—The answer of the witness is objected to as secondary so far as it attempts to characterize the statements of the circular letter, which are in themselves the best evidence and the balance of the answer is objected to as argumentative and based upon the letter and not upon the witness's own knowledge.

Q. 379. In answer to the last question you said that the letter of April 15th, 1904, refreshed your

(Deposition of Ellsworth A. Hawthorne.)

recollection. Please state now, whether, having refreshed your recollection from a reading of the letter, you have an independent recollection of the facts stated in your answer to the last question.

A. I positively have because we made flower horns with tapering sections and longitudinal seams and circular bell for the Graphophone Grand several years previous. I am referring now to making the horns in practical, mechanical, profitable condition out of the steel; aluminum is not a practical metal for a phonograph horn.

Q. 380. The letter of April 15, 1904, refers to "No. 0 3024 flower horn, length 30 inches, width of bell, 24 inches" for cylinder machines and to "No. O 2824 flower horn, length 28 inches, width of bell 24 inches for Victor tapering-arm machines." Please state whether these two flower horns were the same as or different from the flower horns having the same numbers, concerning which you have been questioned to-day. A. The same.

Q. 381. Does the Hawthorne & Sheble *Mfg. catalogue* No. 600 show the construction of the horns mentioned in the letter of April 15, 1904, as "No. 0 3024 flower horn" and No. O 2824 flower horn?"

[586]

A. It does.

Q. 382. Please refer to the place in that catalogue where No. "0 3024, flower horn" of the letter of April 15, 1904, is shown.

A. On the back section of p. 4.

Q. 383. And is there a cut in the catalogue illus-

(Deposition of Ellsworth A. Hawthorne.)

trating the shape and construction of that horn?

A. There is on the front of page 4.

Q. 384. I put the same questions to you with respect to the horn designated in the letter of April 15th, 1904, as "No. 0 2824 flower horn."

Q. The No. "0 2824" is shown on the back of p. 5 and an illustration is shown on the front of the same page.

Direct examination closed.

Cross-examination by Mr. DUNCAN.

XQ. 385. What was your custom about getting out catalogues or price-lists? Did you get them out annually?

A. They appeared at different periods, not annually. It was according to the requirements of trade conditions, the same as I issue similar catalogues in my present line of metal manufacturing.

XQ. 386. When, according to your best information or judgment, was catalogue 600 issued?

A. I cannot state the exact date, but probably in 1904.

XQ. 387. When, according to your best information, was the price-list issued, certain pages of which have been produced and put in evidence?

A. Possibly, 1905; possibly later. In many instances when we issued catalogues we frequently issued what were termed price "fliers" until we had introduced the goods, when we followed the fliers with printed pages bound together.

XQ. 388. Did the first page of this price-list, a number of the pages of which you have produced,

(Deposition of Ellsworth A. Hawthorne.)

show the period at which the price-list was printed?

A. From the style of the price-list I should judge it to be our old No. 50; possibly, it was 51, issued about 1905, possibly, [587] 1906. I think it did.

XQ. 389. Did not page 1 of the price-list, some of the pages of which you have produced, show that it was the price-list for the season, 1905-1906?

A. It may have done so.

XQ. 390. Don't you know that it did show that this price-list was for the season of 1905-1906?

A. When I requested my workman to see if he could furnish me with some information in regard to silk finished horns he said he thought he had some information and brought the pages to me, that I asked particular information about. I asked him at that time the date and he said, "It is a late date; do you wish to see the rest of the pages"? I said, "No, I am in a hurry to catch a train and I wish some information about silk finished horns." I stated that I was familiar in general with the pages and was not interested in looking at them.

XQ. 391. I still repeat my question whether you do not know that the first page of this price-list, some of the pages of which you have produced, that it was the price-list for the period of 1905-1906.

A. My workman told me that it was printed with the date.

XQ. 392. At that date? A. He did not say so.

XQ. 393. Do you not yourself know that the first page of this price-list shows that it was for the season of 1905-1906?

(Deposition of Ellsworth A. Hawthorne.)

A. I have seen a similar price-list which was printed in 1905-1906. I do not recollect the particular pages of the particular catalogue and my particularly having seen the pages that belong to this particular and identical catalogue, but I have seen what I believe to be an exact copy of it and it was so printed.

XQ. 394. Where and when did you see what you believe to be an exact copy of this price-list which you have produced certain pages?

A. I should presume possibly a month ago.

XQ. 395. Where did you see it?

A. At my home.

XQ. 396. Do you admit that the price-list, some of the pages of which [588] you have produced was "for the season of 1905-1906"?

A. The date printed on same would so indicate, and I so believe.

By Mr. HICKS.—If plaintiff's counsel has a complete copy of the price-list about which he is inquiring, he is requested to produce the same since defendant's counsel will be glad to have a complete price-list in order that there may be no question in regard to the completeness of the list.

XQ. 397. Prior to the issuance of this price-list, some of the pages of which you have produced, you had issued and distributed catalogue 600, had you?

A. We had.

XQ. 398. Did you also issue and distribute certain supplements to catalogue 600?

A. Whether we had issued price-lists other than

(Deposition of Ellsworth A. Hawthorne.)

the one of which I have produced several pages I am not positive. I think we did issue such fliers before issuing the bound price-lists.

By Mr. HICKS.—If plaintiff's counsel has any such documents he is requested to produce the same and show them to the witness. The witness is entitled to see such papers if plaintiff's counsel is in a position to exhibit them to him.

XQ. 399. Have you in your possession now or under your control the complete price-list that you say that you examined at your home some couple of months ago?

A. I am not positive that I have.

XQ. 400. What became of that?

A. I don't know.

XQ. 401. Have you now produced all of the catalogues and price-lists that you have under your control or in your possession, relating to horns made by Hawthorne & Sheble or the Hawthorne & Sheble Mfg. Co.?

A. That I cannot say because I am making searches constantly and come across these catalogues in my searches.

XQ. 402. What was the date at which your company issued the catalogue that was offered in evidence by the defendant and which shows, on the back cover, the 9ft. horn with the workman standing beside it?

A. I have previously testified that this was issued in the latter part of 1900 or the early part of 1901.

(Deposition of Ellsworth A. Hawthorne.)

By Mr. HICKS.—This line of cross-examination is objected to upon the ground that it has no bearing whatever upon the direct examination for which the witness has been recalled, the cross-examination upon the other matter having been concluded and reiterated.

XQ. 403. Did all of the price-lists, issued by your company, of the kind shown in the pages that you have produced, 2-20, inclusive have the typewritten or imitation typewritten figures on them as shown in these pages you have produced? A. Not all.

XQ. 404. Which of these typewritten lists had these special prices on them in typewriting or imitation typewriting?

By Mr. HICKS.—Objected to as immaterial and irrelevant.

A. No specified lists. It was a matter of our judgment at the time of issuing a certain price-list. Some did and some did not bear such additional quotations. Some we wrote in in such figures in pen and ink.

XQ. 405. Are the statements in your circular letter of April 15, 1904, true?

A. The general statements can be taken as absolute fact as I have previously testified that the silk finish horn was a horn with a handsome finish and while much was claimed for it as a reproducing horn still I never pinned much strength to that feature, but the horn certainly would sell on appearance; and the letter calls particular attention to the silk finish as being universally accepted as a fine

(Deposition of Ellsworth A. Hawthorne.)
finish and as having a standard of merit.

XQ. 406. Please examine the circular letter carefully and point out any statement therein as to the correctness of which you have any question.

A. The last paragraph relating to the gold strips and the decorations is a matter of taste. The statement can be viewed as being correct, and I state that it undoubtedly is correct but for my taste and my own view-point, I do not particularly care for a morning-glory horn such as described, as my taste is quiet and not flashy [590] I always considered the flower type of horn as appealing to that portion of the purchasing public, who like flashy devices.

XQ. 407. Have you now pointed out all the statements in the circular letter of April 15, 1904 as to the correctness of which you have any question?

A. I did not raise any question about the correctness of any statement. I make comparisons with individualistic ideas or tastes.

XQ. 408. Are there any statements in the circular letter referred to that are incorrect?

A. None that I can discover.

XQ. 409. Have you carefully read the letter in question? A. I have.

XQ. 410. You applied your so-called silk finish, did you not, to other horns than those of the flower type. A. We did.

XQ. 411. In connection with such other horns you stated to the public did you not, that "we recommend silk finish horns as being the best horns

(Deposition of Ellsworth A. Hawthorne.)

to use in reproducing; counter-vibration is eliminated and clear brilliant tones produced''?

A. We so advertised them.

XQ. 412. Was that statement truthful?

A. When a horn was made with seams or fastened together with solder, there was a possibility of these seams being incorrectly formed or fastened together insecurely and by placing the silk finish on the horn it undoubtedly did improve the quality of horns that were so constructed; that is to say, with loose seams or in instances of carelessness. I have previously stated from my own view-point, I never could see any difference between the reproduction of a silk finished horn and a correctly made horn of other types. However, that again was my individualistic idea. Undoubtedly others would hardly agree; but my invariable test was to use the ear to determine the quality of reproduction. If an individual was allowed to use his eyes and his ears he would or they would almost invariably see some improvement or perfection in the reproduction from a horn of a type for which they had a liking. Once turn their back to the machine, it was amusing to see the varieties of opinion when the eye did not assist in the decision. [591]

XQ. 413 Did you use any letter or symbol to distinguish the flower horns from the other type of horns in your catalogues? I mean in conjunction with the numbers of the horns.

A I do not think. we did. In fact, I am quite sure we did not when we first manufactured the flower

(Deposition of Ellsworth A. Hawthorne.)

horns. The first metal flower horns placed by us generally on the market, with scalloped bells and with circular bells made of steel, enameled or painted or decorated were sold without literature of any kind until we developed a market. This was as a rule our custom. I follow the same rule to-day. I have been offering a device, I am now manufacturing and have been working on it for over two years and it is only within the last four days that I have prepared and produced any printed matter whatever.

XQ. 414. Have you now answered my last question as fully as you are able to do?

A. We applied the letter "O" to silk finish; the "P" for painted, "E" for enameled; "F" for flower horn.

XQ. 415. When did you commence to apply the letter "F" to the numbers of your horns to indicate the flower style?

A. I cannot state the exact date as I do not know but in the circular of April 15, 1904, issued by Hawthorne & Sheble Mfg. Co., we referred to the flower horn as No. 0 3024, for cylinder machines and the flower horn as No. 0 2824 for Victor tapering-arm machines so that it might have been subsequent to that date that we applied the letter "F."

XQ. 416. In the price-list, certain pages of which you have produced, the letter "F" is regularly used to indicate the flower style of horn, is it not; and its presence indicates that the horn so designated is of the flower style and its absence that it is not of the flower style? Is that correct?

(Deposition of Ellsworth A. Hawthorne.)

A. There are many horns indicated in the price-list referred to for both cylinder and Victor tapering arm types of machines that are [592] indicated by the letter "F" for the flower horn preceding the numerals indicating the size of the horn. On p. 6, however, there are horns mentioned for Victor tapering-arm machines that are not preceded with the letter "F" although preceding these numbers is a mention of flower horns. These horns are indicated by the letter "J," "K," "L" and were for certain types of Victor talking machine. My impression is that these were flower horns. I so connect them because they are in the list or immediately following the list of flower horns and are preceded by remarks about flower horns. It was generally our custom to indicate some other type with a distinguishing letter or numeral.

XQ. 417. What was it that took so much time in the perfection of the machinery to make your flower horns that you illustrated and described in your catalogue 600?

A. A curved grooving machine, power operated; I recollect we were working for months, I believe over 12 months, on this particular device and after we had completed it we were so elated we tried to obtain a patent on it. I visited the factory of Peckstow & Wilcox Co., in Connecticut and tried to interest them in the machine. I do not think we ever applied for a patent on the device because our patent attorney, after investigating told us that he thought it would be a waste of time, money

(Deposition of Ellsworth A. Hawthorne.)

and energy. In addition to the grooving machine we also made a special beading machine which took several months to develop. These machines were a matter of gradual development and had to be worked up little by little to perfection. I have previously stated that the cost of making the machines by hand was excessive.

XQ. 418. When was it that you perfected the curved grooving machine?

A. My impression is that it was in 1904.

XQ. 419. And when did you start working on the development of the curved grooving machine?

A. That I could not state; I have no means of connecting up the exact [593] date.

XQ. 420. Approximately when did you start the development of the curved grooving machine?

A. I believe in 1903.

XQ. 421. How long do you think you were working on this curved grooving machine?

A. Several months.

XQ. 422. When did you perfect the beading machine?

A. That came after the groover. I do not recollect the exact date.

XQ. 423. When do you think you started work on the special beading machine?

A. Probably 1904 as it was subsequent to our working on the grooving machine. The edging of horn sections could be done fairly well by hand although a slow process.

XQ. 424. Please compare the circular or pamph-

(Deposition of Ellsworth A. Hawthorne.)

let that I now show you with pp. 3-20, inclusive, of the price-list produced by you and state whether this pamphlet is a complete copy of your price-list of which you have produced pp. 3-20.

By Mr. HICKS.—Defendant's counsel objected to the tardiness of plaintiff's counsel in producing this circular or price-list. It is unfair to the witness and in good faith should have been exhibited to him before. A motion is now made to strike out the cross-examination of the witness with regard to this price-list for the reason that the price-list was not exhibited to the witness, the witness being entitled to see any written instrument which it is contented contradicts his testimony.

A. The confidential trade price-list handed to me by complainant's counsel appears to be of the same issue as the portion of price-list referred to. This particular "confidential trade price-list" states "the quotations made in this list are on goods enumerated in our catalogue No. 600 and supplements thereto." This bears out my previous statement that we issued statements and different price-lists from time to time. Consequently I am not prepared to state that this was the first and only price-list issued by Hawthorne & Sheble Mfg. Co. in relation to or in connection with catalogue No. 600.

[594]

XQ. 425. Please state whether the price-list shown you in connection with the last question was a price-list issued by the Hawthorne & Sheble Mfg. Co. for the season, 1905-1906. A. It was.

(Deposition of Ellsworth A. Hawthorne.)

By Mr. DUNCAN.—Complainant's counsel asks that the price-list in question be marked for identification as "Complainant's Exhibit for Identification, Hawthorne & Sheble Price-list, Season 1905-1906.

XQ. 426. When was this price-list gotten up and issued?

By Mr. HICKS.—Objected to as immaterial and irrelevant. It is not seen that the cross-examination upon such matters has any bearing whatever upon any material question in this suit.

A. This price-list was probably printed in some part of 1905, possibly, the latter portion. The advertisement appearing in the Talking Machine World to catalogue 600 as early as January 15, 1905, which would indicate that we printed the catalogue No. 600 a considerable period preceding the issuance of price-list, No. 50.

XQ. 427. Can you state any supplements to catalogue 600 you issued prior to the price-list No. 50?

By Mr. HICKS.—Objected to as immaterial and irrelevant.

A. I can hardly tell. The method we adopted was to print pages from time to time of new devices and then add them to our existing catalogue by fastening with staples and while we might start a catalogue such as No. 600 with four pages eventually it might grow to twenty-four and bear the same catalogue number.

XQ. 428. Did your company issue any catalogue that illustrated or described phonograph horns be-

(Deposition of Ellsworth A. Hawthorne.)

tween the catalogue on the back cover of which is the reproduction of a 9-ft. horn with a workman standing beside it and catalogue 600.

A. I do not know. We may have done so.

XQ. 429. What is your best recollection as to the issuance of any catalogue of your company between these two?

A. I have no distinct recollection because when I found the catalogue showing the cut with the man standing alongside the large [595] horn I had practically forgotten its existence. As an evidence of that fact, will state that when I told my wife that I wanted her to go hunt for a photograph that I had of a man alongside of a large horn, I was under the impression that we had made a cut and illustrated it in our catalogue and I wished particularly for a photograph and when this particular catalogue was found, I was quite a little surprised, indicating that we issued many leaflets, supplements, catalogues from time to time.

XQ. 430. Do you think that your company issued no catalogue or illustrated horns between the date of the catalogue showing the 9-ft. horn with the workman on the rear cover and catalogue 600?

A. I am not prepared to state either way; I don't know.

XQ. 431. It is a fact, is it not, that in the early part of 1904, you endeavored to get a patent or patents on the new shape of horns you were then putting out?

A. We underwent a similar experience at that

(Deposition of Ellsworth A. Hawthorne.)

time with our ideas in regard to obtaining patents on certain types of horns, and Mr. Sheble so mentions them in his letter of April 15th, 1904, or at least he makes an inference thereto. We consulted with our attorneys in this respect and he advised us that he did not think that we could obtain patents on the horns referred to although I believe we had applied for a patent on our "Clover horn"; I am not positive about this, and Mr. Sheble in his reference in his letter refers to what we expected to do because I recollect the circumstance distinctly.

XQ. 432. It was a fact, however, was it not, that in April, 1904, you had on the way patents to cover the new shapes "which we are adding to our line"?

By Mr. HICKS.—Objected to as immaterial.

A. I have stated that we consulted with our patent attorneys in this connection and contemplated making such application; possibly, [596] some applications were made.

XQ. 433. Who was the inventor whose applications for these new shapes of horns were filed?

By Mr. HICKS.—Same objection.

A. In most instances applications were made in the name of Hawthorne & Sheble and it is possible that they would have been made or if made, were made in Mr. Sheble's name.

XQ. 434. I do not wish for your surmise but I wish for your knowledge as to the names of the inventor or inventors who applied for patents to cover the new shapes of horns that you were adding to your line in April, 1904.

(Deposition of Ellsworth A. Hawthorne.)

A. I have no recollection of any one other than Mr. Sheble.

XQ. 435. Did Mr. Sheble apply for a patent on a new shape or new shapes of horns that you were adding to your line in April, 1904?

A. I do not know that he applied for any patents on horns or new horns in April, 1904.

XQ. 436. That was not my question. I ask whether Mr. Sheble applied for any patent to cover new shapes of horns which you were adding to your line in April, 1904.

A. If he did not apply, and I believe he did, it was due to discouragement on the part of our patent attorneys.

XQ. 436. Did you apply for any patent on the shape of a horn during the year 1903, or 1904?

A. I have no recollection of having done so.

XQ. 437. Are you positive that you did not?

A. I do not think I did.

XQ. 438. Who applied for the patent on the clover shape of horn?

A. If a patent was applied for it was probably done by Mr. Sheble.

XQ. 439. Who were the attorneys that you consulted in regard to patenting the new shapes of horns that you were adding to your line in 1904?

A. Howson & Howson. Mr. Harry Smith was the patent attorney employed by Howson & Howson, who advised us. [597]

XQ. 440. You have reason, have you, to doubt the truthfulness of the statement in Mr. Sheble's letter

(Deposition of Ellsworth A. Hawthorne.)
of April 15, 1904, reading as follows:

“We have under way patents to cover the new shapes which we are adding to our line”?

By Mr. HICKS.—Objected to as immaterial.

A. I have no reason to doubt it.

XQ. 441. Did you ever obtain any patents on the new shapes that you were adding to your line in April, 1904? A. We may have done so.

XQ. 442. Please state the numbers of any of such patents that you obtained.

A. I don't know of any by number. I would have to search back in the history of the company. I sold a large number of patents to the Columbia Phonograph Co. or the American Graphophone Co., some twenty, it may have been forty, at one time and among the number were the patent on horn cranes, silk finish horn, etc.

XQ. 443. Were there any patents in this number relating to the shape of the horn?

A. I do not recollect.

XQ. 444. If you applied for any patents on the shape of the horn that you were adding to your line in April, 1904, and on which applications no patents issued, will you authorize Howson & Howson to allow complainant's counsel to examine such applications?

By Mr. HICKS.—Objected to as not asking for a fact, also it not appearing that the witness would have the authority to give such authorization; also as speculative and a fishing expedition.

A. I have no authority to grant you the right to examine Howson & Howson's records but I have no

(Deposition of Ellsworth A. Hawthorne.)

doubt that probably these gentlemen would be glad to confirm my statements.

XQ. 445. So far as you have any authority will you authorize Howson & Howson to show complainant's counsel any application files they may have relating to applications for patents on shapes of phonograph horns that you were adding to your line in April, 1904? [598]

A. I shall be very glad to do so and will assist you if it will please you.

XQ. 446. I understand you to remark, off the record, a few moments ago, that you thought you could obtain from your office records the numbers and dates of applications for letters patent on phonograph horns, that were filed on behalf of the Hawthorne & Sheble Co.; is that correct?

A. I did not say so. I said that if I could get my office on the 'phone I might get information.

XQ. 447. Will you consult your office force or office records and let complainant's counsel know the number or numbers and dates of applications filed on behalf of the Hawthorne & Sheble Mfg. Co. or its officers on forms of phonograph horns during the year 1904?

By Mr. HICKS.—Objected to as immaterial, irrelevant and a waste of time.

A. I shall be pleased to.

XQ. 448. And will you also give permission to Howson & Howson to give complainant's counsel access to any records that firm may have, relating to such applications?

(Deposition of Ellsworth A. Hawthorne.)

A. I would have no objection to having Howson & Howson show complainant's counsel, by proof, if they retain same, to indicate that an effort was made on the part of Mr. Sheble or the Hawthorne & Sheble Mfg. Co. to obtain patents.

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 449. Referring to the letter of April 15, 1904, please state the kind of seams employed to join together the sections of the horn designated No. 0 3024 flower horn for cylinder machines and No. 0 2824 flower horn for Victor Tapering Arm machines.

A. They were longitudinal seams. They may have been lap seam; they may have been made by the tin-smith's lock seam or they may have been soldered.
[599]

RDQ. 450. Complainant's counsel has produced a copy of the Hawthorne & Sheble Mfg. Co. catalogue No. 600. Have you compared the same with the copy of that catalogue which you produced?

A. I have.

RDQ. 451. And what do you find?

A. They seem to be identical.

RDQ. 452. What were the companies putting out cylinder machines and what were the companies putting out disc machines on April 15, 1904, and prior thereto, in this country?

A. National Phonograph Co. of Orange, N. J., and the American Graphophone Co. and Columbia Phonograph Co. of New York and Bridgeport were offer-

(Deposition of Ellsworth A. Hawthorne.)

ing cylinder machines. The Victor Talking Machine Company of Camden, New Jersey, were offering the disc machine.

Redirect examination closed.

Deposition closed.

Signature waived.

October 27, 1913.

Met pursuant to agreement.

Present: Counsel as before.

ELLSWORTH A. HAWTHORNE, a witness duly sworn on behalf of defendant, being recalled, testifies as follows:

Direct Examination by Mr. HICKS.

Q. 453. Please state whether you have made any further search for papers and documents relating to the manufacture of flower horns by the Hawthorne & Sheble Mfg. Co. A. I have.

Q. 454. Have you found any early illustration of those horns; and if so, please produce and describe the same.

A. I have. I found three pictures illustrating the type of flower horn manufactured by Hawthorne & Sheble Mfg. Co., that was made with the larger diameter more nearly a circle and without much indication of scallops, with which horns of the flower type were made of later date.

The picture marked "X 11" indicates one horn in the upper portion [600] which was made for the Edison phonograph. The picture of the flower horn in the lower portion of the picture indicates the type of horn made for the Victor Talking machine.

(Deposition of Ellsworth A. Hawthorne.)

Picture marked "X 12" indicates how nearly the horn was made in a circle at the larger diameter and also indicates how the horn was decorated on the interior.

Picture "X 13" illustrates the flower horn on an Edison phonograph.

These illustrations above referred to were carried by me personally to demonstrate to customers the appearance of the horn.

These pictures were carried by me to show the trade flower horns made of steel, decorated, and were carried by me in the latter part of 1903 and the early parts of 1904.

I found them with printed matter dated 1903-1904.

Q. 455. Was there any particular trade for which you used the three photographs referred to in your last answer; that is to say, any trade for any particular season of any year?

By Mr. DUNCAN.—Objected to as leading.

A. The illustrations referred to were shown by me to the jobbing trade in the latter part of 1903 in an endeavor to secure orders for this type of horn for the Xmas trade of 1903.

Q. 456. Please state what importance, if any, the Xmas trade has been in the phonograph business.

A. In the early history of the phonograph business, at the time the phnograph was being offered as, a means of home entertainment, the bulk of the business was done during the Xmas holidays. In the year 1895 we sold as many phonographs for delivery

(Deposition of Ellsworth A. Hawthorne.)

in December as we had sold in the previous six months.

Q. 457. Please describe the seam by which the strips composing the horns shown in the 3 photographs just produced by you were joined together.

By Mr. DUNCAN.—Objected to on the ground that the exhibit is the best evidence. [601]

A. The sections of the horns were made from strips of metal wide at one end, narrow at the other, and tapering throughout their length. The seams were carried on the outer portions of the horn, soldered together, and striped with paint.

Q. 458. What success did the Hawthorne & Sheble Mfg. Co. have in manufacturing the flower horns shown in the photographs for the Xmas trade in 1903?

A. Poor success, due to the fact that the horns were made of steel. During the process of soldering the acid used spread over and impregnated certain portions of the metal. This caused discoloration. The horns were finished on the inside and outside with paint. We sent out a number of the horns to the trade and many were returned because the steel rusted or had been rusted before they were painted. The rust had not been thoroughly cleaned off or the fact that they had been rusty and then cleaned caused the paint to blister and come off. This ruined the appearance of the horns as they showed rusty spots over their surface. We were not very successful with horns under such conditions and from that period forward we devoted consider-

(Deposition of Ellsworth A. Hawthorne.)

able time to experiments. Later the horns were made of tin and this overcame our early troubles.

Q. 459. Please compare the horns shown in the three photographs just produced by you with the horns shown in Plaintiff's Exhibits, for identification, consisting of page 18 of the Talking Machine World for January 15, 1905, page 4 of the same publication for February 15, 1905, and page 7 of the same publication for March 15, 1905.

A. The horns appearing in the advertisements you refer to are flower horns with scalloped bells and are silk-finished horns. The stripes on the silk-finished horns were made by attaching gold paper to the ribs or seams. The horns shown in the illustrations "X 11," "X 12" and "X 13" were of the earlier type of flower horn. [602]

Q. 460. Are there any other differences between the horns referred to?

A. The horns shown in the advertisements in the Talking Machine World previously referred to by you were made after we had tools for their manufacture. The horns shown in illustrations X 11, X 12, X 13, were made by hand. The tool-made horns were more attractive and were made at infinitely less cost than the hand-made horns.

Q. 461. Are those all the differences between the horns referred to?

A. Outside of the better appearance of the horns appearing in the advertisements of the Talking Machine World and better decorations and the fact that the horns appearing in the advertisements of the

(Deposition of Ellsworth A. Hawthorne.)

Talking Machine World were provided with deeper scallops in the bell, they are practically the same.

Q. 462. Did you succeed in manufacturing a sufficient quantity of the horns shown in the three photographs X 11, X 12, and X 13 for the Xmas trade in 1903?

By Mr. DUNCAN.—Objected to as leading.

A. No. Owing to the difficulties in decorating and manufacturing.

By Mr. HICKS.—The three photographs produced by the witness are offered in evidence and marked respectively “Defendant’s Exhibit, Hawthorne & Sheble Mfg. Co. Photograph of Flower Horn for Xmas Trade of 1903, X 11, Frank Z. Demarest, Examiner”; “Defendant’s Exhibit, Hawthorne & Sheble Mfg. Co. Photograph of Flower Horn for Xmas Trade of 1903, X 12, Frank Z Demarest, Examiner”; and “Defendant’s Exhibit, Hawthorne & Sheble Mfg. Co. Photograph of Flower Horn for Xmas Trade of 1903, X 13, Frank Z Demarest, Examiner.”

By Mr. DUNCAN.—The exhibits just offered in evidence are objected to as insufficiently and improperly proven and the titles given the exhibits are objected to as misleading.

By Mr. HICKS.—As the objection seems to have no point defendant’s counsel is not notified by the objection of any proper ground.

Q. 463. On photograph X 11 two flower horns are shown. For what machines were those two flower horns intended?

(Deposition of Ellsworth A. Hawthorne.)

A. The upper one for an Edison phonograph or similar types of [603] machines such as the Graphophones. The lower one for the Victor Tapering Arm machine and similar types of machines.

Q. 464. On the backs of the photographs X 11 and X 12 the following appears: "1902 H. S." Do you know in whose handwriting those figures and letters are or how they came to be written on the backs of those two photographs? A. I do not.

Q. 465. Did you, in your search, find a copy of the circular letter of April 15, 1904, sent out by the Hawthorne & Sheble Mfg. Co., being the circular letter produced in the deposition of William J. Elwell, in this suit?

A. I found another copy of the circular dated April 15th, 1904, and signed by Mr. H. Sheble, in his own handwriting.

Q. 466. Referring to the circular letter of April 15, 1904, and the flower horns therein designated No. 0 3024 and No. 0 2824, please compare those flower horns of the letter with the flower horns shown in the photographs X 11, X 12 and X 13.

A. The flower horns referred to in the letter of April 15th, 1904, refer to these particular horns, shown in the illustrations marked X 11, X 12 and X 13. Hawthorne & Sheble Mfg. Company, however, did not commence to push the sale of flower horns generally with the trade until after they had designed fixtures and tools to enable them to manufacture at a less cost than those made entirely by hand.

(Deposition of Ellsworth A. Hawthorne.)

Q. 467. Referring to the tools made by the Hawthorne & Sheble Mfg. Co. before they began to push the sale of the flower horns in a general way, what sort of seam were those tools designed to make, if any?

A. The tools were designed to make horns with the tinsmith's lock seam. The first flower horns manufactured by Hawthorne & Sheble Mfg. Co. were made with soldered seams, and you'll note in circular of April 15th, 1904, that it refers specifically to flower silk-finished horns. We did not make the flower silk-finished horns until quite a long while after we started to manufacture flower horns made of steel and painted. [604]

Q. 468. When were the tools for making the tinsmith's or lock seam finished by the Hawthorne & Sheble Mfg. Co.?

A. The first tools were made in the early part of 1904, and you might say that the tools in a sense were never finished. Manufacturers, if they are up-to-date, are always making new tools, new improvements, adopting new methods. I recollect in 1906 we made a special tool for a portion of the work on the flower horn that we never thought could be made with tools. As long as we manufactured flower horns we were making tools. The first tools made were crude and later were discarded for better designed devices that again reduced cost.

Q. 469. What I would like to have you state is when did Hawthorne & Sheble Mfg. Co. first make the tinsmith's or lock seam and when by means of tools or

(Deposition of Ellsworth A. Hawthorne.)
machinery, as distinguished from the operation carried on in what you have styled "hand-made horns."

A. In the early part of 1904.

Q. 470. Referring to diagrams No. 1, 2, 3 and 4 annexed to your affidavit, which have been offered in evidence, did you draw those diagrams or make the writings thereon? A. No.

Q. 471. Those diagrams and the figures and writings thereon are in my handwriting, are they not?

A. I think they are.

Q. 472. When, in XQ. 220, plaintiff's counsel asked you whether the sketch marked "Diagram 4" was a correct reproduction of a sketch marked in your handwriting, "Diagram No. 3 and Diagram No. 4" did you observe that he attributed the handwriting to you when you answered the question?

A. I did not.

Q. 473. In your search recently made did you find any other papers which throw any light on the Hawthorne & Sheble catalogues?

A. Yes. With the illustrations Marked X 11, X 12 and X 13 I found two price-lists, one marked No. 40, dated 1903-1904, another marked No. 50, 1903-1904.

These two price-lists No. 40 and 50 refer to catalogue No. 500. [605] It was the custom of the Hawthorne & Sheble Mfg. Company to number their dealers' price-list No. 40, their distributors' and jobbers' price-list No. 50. I previously testified that some of these price-lists were prepared by pen-writ-

(Deposition of Ellsworth A. Hawthorne.)

ten special prices. The No. 50 would corroborate that assertion.

I also found a special circular on flower horns with descriptive matter and list prices; also a circular issued in June, 1904, calling attention to certain types of flower horns.

Q. 474. The circular letter of June, 1904, mentions the silk-finish flower horns 0 3024 and 0 2824, mentioned in the letter of April 15, 1904. It also mentions enameled flower horns No. 3024 E and No. 2824 E for cylinder and Victor Tapering Arm machines respectively. What difference, if any, existed between the enameled flower horns and the silk-finish flower horns?

A. The enameled flower horns were finished with an enamel; this was done by dipping the horn in a tub or vat containing the enamel and was a method employed by Hawthorne & Sheble Mfg. Company to reduce the cost of finish as compared to the more laborious and expensive process of painting the horns with a brush.

The silk-finished horns were covered with a special shellac or preparation to enable the Hawthorne Mfg. Company to secure the "silk finish" consisting of cloth to be permanently attached to the horn.

Q. 475. Did you find any record of any shipment of flower-silk horns by the Hawthorne & Sheble Mfg. Co. in the early part of 1904?

A. I found a letter dated May 25th, 1904, signed by Mr. H. Sheble, advising me of shipments being made of flower horns to various parties, "Stewart,

(Deposition of Ellsworth A. Hawthorne.)

Wellner, Beach and Matthews."

Q. 476. Did you find any letter enabling you to fix the date of publications of the catalogue of the Hawthorne & Sheble Mfg. Co., showing the large horn with a man standing beside it, on p. 11 and on the back cover thereof, referring to the catalogue that has been offered in evidence? [606]

A. I did. A letter written to me by my son Horace Hawthorne, dated March 17th, 1902, Germantown, Philadelphia, Pa., 955 East Cheltenham Ave. This was some time after Hawthorne & Sheble Mfg. Co. had given up their New York office at 297 Broadway, New York. After I closed the New York office I returned to Philadelphia and 955 East Cheltenham Ave., Germantown, was my Philadelphia residence.

Direct examination closed.

Cross-examination by Mr. DUNCAN.

XQ. 477. In whose handwriting are the figures X, 11, X 12 and X 13 appearing on the photographs that you produced this morning and that were offered in evidence? A. My own.

XQ. 478. And when were these figures placed on the photographs? A. About 10 days ago.

XQ. 479. In whose handwriting are the figures appearing in red ink as follows:

"X 1" on the letter from your son of March 17, 1902;

"X 2" on confidential price-list No. 40, 1903-1904;

"X 3" on confidential price-list No. 50, 1903-1904;

"X 5" on circular letter of April 15, 1904;

(Deposition of Ellsworth A. Hawthorne.)

“X 9” on the special circular relating to flower horns and appearing in pencil on Mr. Sheble’s letter to you of May 25th, 1904, “X 23” and on the circular letter of June, 1904, “X 15.”

A. My own.

XQ. 480. And is the annotation “X 35” appearing at the top of p. 1 of the confidential price-list No. 50, dated 1905–1906, also in your handwriting? A. It is.

XQ. 481. Were the annotations referred to in the two preceding questions made by you at the same time as those referred to in XQ. 477?

A. They were all made at the same time.

XQ. 482. When was the special flower horn circular that you marked “X 9” in red ink and that you referred to in your direct examination this morning circulated by Hawthorne & Sheble Mfg. Co.? A. I believe in the latter part of 1904.

XQ. 483. And when were the confidential price-lists No. 40 and 50 that you marked in red ink X2 and X3 respectively, issued and circulated [607] by your company? A. In 1903 and 1904.

XQ. 484. Who was Stewart that was referred to in Mr. Sheble’s letter to you of Mar. 25, 1904, that you produced this morning and which is marked “X. 23”?

A. I believe it was Frank Stewart, our salesman. I am not positive.

XQ. 485. And who was Wellner referred to in that letter?

A. I believe it was Julius Wellner of Philadelphia.

XQ. 486. What was his business at that time?

(Deposition of Ellsworth A. Hawthorne.)

A. Musical instruments, talking machines.

XQ. 487. Who was Beach referred to in that letter?

A. A I believe it was H. A. Beach of Bridgeport, Conn.

XQ. 488. What was his business at that time?

A. Talking machine, crockery ware, general store.

XQ. 489. And who was Matthews referred to in that letter?

A. Probably A. D. Matthews of Brooklyn, department store. Matthews and the parties referred to were some of the parties that I approached to sell flower horns to by means of the protographs and previously offered.

XQ. 490. Have you any personal recollection as to the shipment of flower horns to either Stewart, Wellner, or Matthews? A. Yes.

XQ. 491. What is your recollection in regard to the shipment of flower horns to Stewart? Where was that shipment to Stewart made?

A. I have no personal recollection of Stewart, but of Beach. I recollect that I tried to collect our account from Beach later on and that I could not do so. Wellner was continually floating in and out of our factory and I was selling him goods constantly. A. D. Matthews & Sons I personally solicited and arranged for a display of flower horns in their window.

XQ. 493. Were the horns referred to in this letter of May 25, 1904, shipped to Matthews for the purpose of window display that you have referred to? [608]

A. Not necessarily. We were shipping them

(Deposition of Ellsworth A. Hawthorne.)

flower horns and all types of horns continually. I particularly recollect Matthews because their buyer was one who called my attention to the facts that the rust on the steel of which the horn was constructed was spoiling the paint decorations.

A. Who was the decorator from whom you received the horns referred to in the letter of May 25, 1904?

A. I could not state positively. We employed several.

XQ. 494. When did you find the documents that you have produced this morning, numbered, in your handwriting, X1, 2, 3, etc., as stated in XQ. 477-480?

A. Sunday night, October 12.

XQ. 495. Did you also find a number of other documents that you numbered at that time but have not referred to on your direct examination this morning?

A. I did.

By Mr. HICKS.—Defendant's counsel presents to complainant's counsel for examination a number of other documents found by the witness which defendant's counsel has not referred to because the record is already so voluminous.

XQ. 496. Have you now searched as thoroughly as you can for documents illustrating the different kinds of horns that you say your firm and your corporation manufactured and sold from 1898 to 1905 or thereabouts? A. I am making further searches.

XQ. 497. When did you first commence searching for documents relating to the construction of your early horns for use in connection with this case and similar litigation?

(Deposition of Ellsworth A. Hawthorne.)

A. Some time shortly before I made my deposition.

XQ. 498. Are you now referring to the affidavit that you made in this case, which is dated June 3d, 1913? A. Yes, if that's the date of it.

XQ. 499. The series of diagrams numbers 1, 2, 3 and 4 attached to your affidavit of June 3d, 1913, and referred to by you in that affidavit was a correct representation of the matters intended to be illustrated by those diagrams, was it not? [609]

A. That illustrated some features of the construction of horns made by Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co. and are correct as far as they go.

XQ. 500. And is anything incorrect about the diagrams referred to?

A. Nothing. We made many types of horns and each type of horns required its own particular pattern. I do not attempt to state that the diagram referred to by any means covers all the patterns required to make all the horns of varying models, made either by Hawthorne & Sheble or Hawthorne & Sheble Mfg. Co.

XQ. 501. Is there anything in diagrams 1, 2, 3 and 4, attached to your affidavit of June 3, 1913, or in the description in that affidavit of the diagrams, that is incorrect?

By Mr. HICKS.—Question is objected to as indefinite. It is evidently a catch question. It does not direct the attention of the witness to any particular part of the affidavit or to any particular thing.

A. The diagrams are correct.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 502. Is there anything about the description of the diagrams that is incorrect?

A. Diagram No. 1 indicates the type of horn manufactured by Hawthorne & Sheble from tapering strips of metal, that were wide at one end and narrow at the other, tapering throughout the entire length. Diagram No. 2 is of similar construction. Diagrams Nos. 3 and 4 indicate tapering strips of metal from which types of tapering strips horns were constructed by Hawthorne & Sheble and Hawthorne & Sheble Mfg. Co.

XQ. 503. Now will you please read my last question and state whether there is anything in the description found in your affidavit of June 3, 1913, and the four diagrams attached to your affidavit that you find to be incorrect.

By Mr. HICKS.—Same objection. If plaintiff's counsel is hereafter to urge any incorrect statement of the affidavit he should make his questions specific so that the witness may know what is [610] intended and may not give an answer having no bearing upon what may be concealed in the mind of plaintiff's counsel.

A. There is nothing incorrect in the statements made in my affidavit. The methods illustrated in these diagrams as employed by Hawthorne & Sheble prior to the year 1900 were various. The diagrams do not illustrate all the methods employed by them.

XQ. 504. Of what material was the body of your silk-finish flower horn made?

A. Of tin, brass, and possibly other metals.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 505. Did you make the body of your silk-finish flower horn of steel? A. I think we did.

XQ. 506. During what period of its manufacture did you make the body of your silk-finish flower horn of steel?

A. We experimented with steel in the early stages but we found it was not suitable. I do not think many horns were made of steel with the silk finish.

XQ. 507. When did you abandon the use of steel in your silk-finish flower horn? A. I do not know.

XQ. 508. Approximately how long did you continue using steel in the silk-finish flower horn?

A. That I could not say. I introduced and sold the horns to the trade, and just when they changed from one metal to another metal I could not state positively except that I am positive in regard to the difficulties we had with steel.

XQ. 509. How did you join the edges of the sections of the silk-finish flower horns that were made of steel?

A. Probably in both types, soldered and tinsmith's seams.

XQ. 510. Are you sure you ever made any tinsmith's seams with the steel sections?

A. I am not positive. I know we had a great deal of trouble with steel from other causes outside of rust. When we attempted to form tinsmith's seams the steel broke and we turned to the use of tin. [611]

XQ. 511. Did you continue the use of steel in your silk-finish flower horns for as long as six months?

A. We may have done so.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 512. Did you continue your silk-finish flower horn in steel for as long as a year?

A. I do not know.

XQ. 513. Did you continue your silk-finish flower horns in steel for eighteen (18) months?

A. I have no records to base any dates on when we stopped using one class of material for another, except that I know we used steel in the first instance and had great difficulty on account of rust and other causes.

RECESS.

XQ. 514. To horns made of what material did you first apply your silk finish? A. Steel.

XQ. 515. To what shaped horn did you first apply your silk finish?

A. A horn cylindrical body, tapering in shape.

XQ. 516. Did you first apply your silk finish to the B. & G. style of horn?

A. Yes, to that type of horn.

XQ. 517. How long did you use steel in your B. & G. horn or in that type of horn?

A. As long as we manufactured horns.

XQ. 518. How did you make the seams in the steel horns of the B. & G. type?

A. We made them with the lap seam and the tinsmith's seam. The lap seams were soldered and in some instances we used solder on the tinsmith's seam if the horn developed a rattle.

XQ. 519. In those cases where you made the flower horns of steel sections, soldered, in what way were the edges of the sections joined to each other?

(Deposition of Ellsworth A. Hawthorne.)

A. The first steel horns of the flower type made by Hawthorne & Sheble Mfg. Co. were made with abutting seams. That is to say, the edges of the tapered sections were turned over at right angles and soldered together. Later, after developing machinery, we made the horns with the tinsmith's seam. [612]

XQ. 520. Do you understand that I am now speaking solely of the flower horns made of steel sections, do you?

A. I have answered your question.

XQ. 521. Am I right in understanding you that at first you made your steel sectional flower horns with flanges at the edges, that were soldered together to form a butt seam and that later you turned the edges over to form the locksmith's seam?

A. Yes, sir.

XQ. 522. In what way were the sections of the horn shown on the photographs you produced this morning, X11, 12 and 13, joined?

A. It is hard to tell from the photograph. They may have been horns formed with a butted seam or they may have been horns made with the tinsmith's seam. It is not clear in the photograph.

XQ. 523. Did you ever make any sectional horns of the flower shape, composed of steel sections, the edges of which overlapped each other and were soldered together? A. We may have done so.

XQ. 524. Have you any recollection one way or the other on that point?

A. We made horns that had seams, one edge overlapping the other. We made them with butt seams,

(Deposition of Ellsworth A. Hawthorne.)

where the metal was turned at right angles, and we made horns with the tinsmith's seams and also with seams that were brazed. I do not recollect the flower horns made with the lap seam. It was not a practical way of making them from the manufacturers' standpoint.

XQ. 525. State the names of any of your proposed customers to whom you attempted to sell flower horns for the Xmas trade in 1903.

A. A. D. Matthews & Sons, Brooklyn, N. Y.; Pardee Ellenberger & Co., New Haven, Conn.; J. A. Foster & Co., Providence, Rhode Island; The Eastern Talking Machine Co., Boston, Mass.

XQ. 526. Is it a fact that at any time the Hawthorne & Sheble Mfg. Co. made flower horns out of steel in a practical, mechanical and profitable way?

By Mr. HICKS.—Objected to as immaterial.

A. Our first attempts to introduce the flower steel horn were not [613] profitable because the horns were made by hand in an expensive manner with butted seams soldered and it was not until we refined our processes of manufacturing by the aid of special fixtures and tools that it became profitable. Initial attempts in manufacturing are always somewhat experimental and costly until proper methods have been discovered and adopted.

XQ. 527. Do I understand you now to say that after a while you found steel suitable for the practical manufacture of flower horns?

A. Steel can be used and was used by Hawthorne & Sheble Mfg. Co., practically.

(Deposition of Ellsworth A. Hawthorne.)

XQ. 528. Was steel used by Hawthorne & Sheble Mfg. Co. in the practical and commercial manufacture of flower horns?

By Mr. HICKS.—Same objection, no metal being specified in the patent in suit.

A. Hawthorne & Sheble Mfg. Co. used all metals with more or less varying degrees of success. We had steel made specially for us for manufacturing horns of all types, steel that was put through special processes of annealing for our line of work. Marshall Bros. of Philadelphia supplied steel to us in 10-ton lots, specially annealed, for our manufacturing processes.

XQ. 529. Question repeated. A. Yes.

XQ. 530. Is this letter which I now show you, marked X23, which is dated May 25th, 1904, the letter from which you read into the record the names of Stewart, Wellner, Beach & Matthews, in your answer to Q. 475? A. Yes.

By Mr. HICKS.—The letter referred to is offered in evidence and marked “Defendant’s Exhibit, Letter of May 25, 1904, H. Sheble to E. A. Hawthorne, Frank Z. Demarest, Examiner.”

XQ. 531. Will you please produce the two price-lists for the season 1903–1904, Nos. 40 and 50 respectively, which you previously marked X2 and X3; also the flower horn circular that you referred to on your direct examination and which you marked X9 in red ink and the [614] circular letter of June, 1904, which you produced and which you have marked in pencil X15. A. I herewith produce them.

(Deposition of Ellsworth A. Hawthorne.)

By Mr. HICKS.—Defendant offers in evidence the papers referred to in the last question. The same are marked “Defendant’s Exhibit, Trade Price-list No. 40, 1903–1904, Trade Price-list No. 50, 1903–1904, Flower Horns for Talking Machines and Circular Letter of June, 1904, of Hawthorne & Sheble Mfg. Co., Frank Z. Demarest, Examiner.”

XQ. 532. In the other papers which you found some 10 days or so ago and which are now in the possession of counsel for defendant, are there any price-lists or circulars relating to horns, covering 1902?

By Mr. HICKS.—Objected to as immaterial.

A. There is one which I had marked in pencil “X 19” and which is trade price-list No. 406 for catalogue No. 403.

XQ. 533. And among these papers is there a circular price-list of Dec. 23, 1903, relating to horns?

A. Yes, it is the document marked in red ink “X 6” which was issued Dec. 23d. 1903.

XQ. 534. And is this document which I now show you and which is marked in red ink X4, your confidential price-list for the season 1903–1904?

A. Yes.

XQ. 535. And is this document I now show you which is marked in pencil X18, a circular price-list of your flower horns which your company issued May 20, 1905? A. Yes.

Complainant’s counsel asks that the documents above referred to marked X19, X6, X4 and X18 be marked for identification as “Complainant’s Exhibits for Identification, Hawthorne & Sheble Price-

(Deposition of Ellsworth A. Hawthorne.)

list 1902-1903; Hawthorne & Sheble Price Circular Dec. 23d, 1903; Hawthorne & Sheble Confidential Trade Price-list No. 40, Season 1904-1905; and Hawthorne & Sheble Price-list of Flower Horns May 20, 1905," respectively.

XQ. 536. Have you been able to find a catalogue No. 403 referred to in your trade price-list of 1902-1903? A. No, I have not.

Cross-examination closed.

Redirect Examination by Mr. HICKS.

RDQ. 537. In answer to Q. 457, describing the seam by which the strips [615] composing the horn shown in the three photographs X11, 12 and 13, were joined together you said, "The seams were carried on the outer portion of the horn, soldered together, and striped with paint." Please state how the soldering was effected.

A. The edges of the longitudinal strips were bent over at right angles, tacked together at each end with solder to hold them in position, placed on a form and the solder run down the rib or seam to solder them together.

RDQ. 538. You say that the edges of the longitudinal strips were bent over at right angles. In what direction were these edges bent over?

A. Outwardly, on the outside of the horn.

RDQ. 539. Please refer to Fig. 3 of the Nielsen Patent in suit, No. 771,441, and compare the bent-over edges there shown, of the longitudinal strips of the Nielsen horn with the bent-over edges of the longitudinal strips of steel of the horns made by

(Deposition of Ellsworth A. Hawthorne.)

Hawthorne & Sheble Mfg. Co. as shown in the 3 photographs X11, 12 and 13.

A. The method illustrated in the Figure 3 of the Nielsen Patent is identical with the method employed by Hawthorne & Sheble Mfg. Co.

RDQ. 540. Among the papers which you have recently produced and exhibited to plaintiff's counsel is a card of bearing the name "Hawthorne & Sheble" and an illustration of a horn. Please state when that card was printed and describe how the horn there represented was made.

A. The card marked "X7," "Hawthorne & Sheble" is one of a similar lot used by me previous to the incorporation of Hawthorne & Sheble Mfg. Co. and previous to April 20th, 1900. I do not know the exact date it was printed but it was printed previous to that date. When the Hawthorne & Sheble Mfg. Company were incorporated I used a card with the name of the corporation. This card also bears address "43 Broad St.," which indicates that the card was in use by me in the latter part of 1898 or early part of 1899.

It bears a cut of the 56-inch concert horn which was made of [616] tapering strips of metal, wide at one end, narrow at the other, tapering throughout their length.

RDQ. 541. Please describe the edges of the tapering strips of metal that were used to build up the horn shown by the illustration on the Hawthorne & Sheble card.

(Deposition of Ellsworth A. Hawthorne.)

A. The tapering edges were joined together by being brazed.

RDQ. 542. That is not what I meant. What was the direction or configuration of the edges of the tapering strips of metal?

A. The strips of metal were curved and were tapering throughout their length in order to give the horn its tapered shape.

RDQ. 543. It appears from an inspection of the illustration of the horn shown on the card that the horn tapers and curves from one end to the other. Would it be possible to build up or construct such a horn, as far as your experience goes, in any way other than by employing tapering sections of metal or other suitable material, having curved meeting edges?

A. In order to secure that shape of horn it is necessary to have the longitudinal sections taper throughout their length and curve.

Redirect examination closed.

By Mr. HICKS.—The card produced by the witness is offered in evidence and marked “Defendant’s Exhibit, Card of Hawthorne & Sheble, of Prior to April 20, 1900, Bearing the Illustration of a Curved Sectional Horn, Frank Z. Demarest, Examiner.”

Recross-examination by Mr. DUNCAN.

RXQ. 544. Is there anything on this illustration of the horn of the exhibit just offered that shows that it was built up of longitudinal sections or is it a matter of your memory that this horn was constructed in that way?

A. It would not be possible, according to my knowl-

(Deposition of Ellsworth A. Hawthorne.)

edge of the manufacture of horns, to make this horn in any other way than I have described; but there is nothing in the picture on the card to indicate that the horn is made in the manner described, although any expert could corroborate my statement. [617]

RXQ. 545. Was there any circular seam on the horn illustrated on the card just offered in evidence?

A. There is none that I can discover.

RXQ. 546. I am asking whether the horn that was made by you which was illustrated on this card was actually made with a circular seam or not. A. No.

RXQ. 547. Did you make no 56-inch brass horns with circular seams?

A. We made 56-inch concert horns with and without circular seams.

RXQ. 548. When you made them with circular seams where was the circular seam located?

A. Some 56-inch horns we made with separate bells and brazed them to the body, the bells being made of longitudinal tapered section, curved, and the bodies being made in the same manner. We also made them from longitudinal sections tapered and curved and brazed together, out of long strips of metal. The bells of the 56-inch concert horns joined to the bodies with seams and bands, the seams brazed and the bands brazed on to the two sections, was practically the same construction as the flower horn in which you make the body out of tapered, curved sections and fasten the top to the body with solder.

RXQ. 549. What is indicated by the white line running from about the center of the handle on the left side of the horn illustrated on the Hawthorne &

(Deposition of Ellsworth A. Hawthorne.)

Sheble card just offered in evidence and extending around the horn toward the right, passing between the letters H and O printed across the horn?

A. I don't know; it is not distinct enough for me to determine whether it was due to imperfect printing or other reasons.

We made 42-inch horns and 48-inch horns of the correct type, which we termed our full-spun brass horns, and these we made up without seams or, more correctly speaking, brazing the bell to the body or a circle or a band. We made many 56-inch concert horns without the circle or band. [618]

RXQ. 550. May not this white line referred to in the last question indicate the circular seam formed by brazing the wide portion of the horn to the tapering conical portion and correspond with the line shown on the illustration of the horn on p. 3 of your catalogue No. 600, in evidence?

A. I have just examined the card marked X 7 with a powerful microscope, and I cannot detect any line on the horn.

On p. 33, "Defendant's Exhibit, Catalogue of 1898 of the Firm of Hawthorne & Sheble" indicates a fifty-six inch horn without seam or circle. I do not believe that the horn illustrated on the card had a circle or had a seam at the point you indicate.

RXQ. 551. How do you know that the horn on the card is a 56-inch horn? Is there anything on the card that shows that?

A. The horn shown on the card I cannot mistake. It was my pet horn. It was my ideal of a proper re-

(Deposition of Ellsworth A. Hawthorne.)

producing horn. It was then; it is now. I cannot possibly be mistaken.

RXQ. 552. Did you make this same style horn in any size smaller than 56-inch? A. Yes.

RXQ. 553. How do you know that the illustration on this card was taken from a 56-inch horn rather than a smaller horn?

A. On a smaller horn the proportions would be different. I had the cuts made; I had the photographs taken. I designed the horn; I sold it for years; I know it.

RXQ. 554. Does your catalogue No. 600 contain any illustration of your 56-inch brass horn?

A. On p. 3 is shown a cut or illustration of a 56-inch horn. This was made late in the history of Hawthorne & Sheble Mfg. Co. On the front page of catalogue issued by the Columbia Phonograph Co., of the Graphophone Grand, is an illustration of a 56-inch horn made in a similar manner to the horn illustrated on the card marked "X7." The first 56-inch conical horns made by Hawthorne & Sheble were made without a seam and without a band. All similar types of [619] horn smaller or less in length than 56-inch, with but very few exceptions, were made without seam or band. The construction of the 56-inch concert type was changed on account of the high cost of the wide metal and was built up in many sections, as I have previously testified, to overcome those faults.

RXQ. 555. Is your 56-inch brass concert horn illustrated in "Defendant's Exhibit, catalogue of

(Deposition of Ellsworth A. Hawthorne.)

1898, of the firm of Hawthorne & Sheble? If so, on what page?

A. It is illustrated on page 20 and on page 21, and on p. 33.

Recross-examination closed.

Re-redirect Examination by Mr. HICKS.

RRDQ. 556. Was the cut on the Hawthorne & Sheble card made from a photograph?

A. It was.

RRDQ. 557. Was the horn shown on the Hawthorne & Sheble card made of metal?

A. It was made of brass.

Re-redirect examination closed.

Deposition closed.

Signature waived.

It is stipulated by and between counsel for plaintiff and defendant that if C. D. Emerson were called to testify in this suit he would testify in accordance with the statements set forth in the affidavit verified by him herein, on June 18, 1913, subject, however, to the right of plaintiff's counsel to cross-examine said Emerson, who is to be produced for such cross-examination by defendant's counsel upon request of plaintiff's counsel. It is further stipulated that said affidavit of said Emerson shall not be used as evidence in this suit in case this suit comes to trial within twenty (20) days from this date and before said witness Emerson has been produced for cross-examination and it is further agreed that the making of this stipulation shall not be urged as a reason for the postponement of the trial of this suit in order

that the [620] cross-examination of said witness Emerson may be had.

[Deposition of Paul Kohler, for Defendant.]

PAUL KOHLER, being duly sworn as witness on behalf of defendant, testifies as follows:

Direct Examination by Mr. HICKS.

Complainant's counsel inquires as to the purpose of defendant's counsel in putting this witness on the stand, whose name has not been mentioned in any of the pleadings or notices of taking testimony.

By Mr. HICKS.—Defendant's counsel did not learn of the testimony which he desires to take of the present witness or of any of the facts relating thereto until October 24, 1913. Defendant set forth in its answer that it was diligently engaged in seeking further information and prayed leave to amend its answer accordingly. Defendant's counsel notified plaintiff's counsel on October 26 that he would take the deposition of the present witness. Defendant's counsel proposes to show by the deposition of the present witness that the horn of the Nielsen Patent in suit was made at Pittsburgh, Pa., as early as 1887 or 1888.

By COMPLAINANT'S COUNSEL.—Complainant objects to the taking of testimony from this witness on the ground that the alleged prior use or anticipation by this witness is not among those set forth in the answer, and no leave has been obtained to amend the answer. Complainant's counsel has repeatedly extended defendant's time to complete its proofs in the east under the existing order and the

(Deposition of Paul Kohler.)

present case is now set for a hearing at the opening of the Equity calendar on Nov. 3d. Complainant must therefore take its proofs by deposition in New York and vicinity in time to get the same to this court for the early hearing of this case and is therefore unwilling that the defendant should at this late date undertake to open up new lines of defense not already pleaded in the answer. Notice is given that the deposition of this witness if taken will be taken without authority of the court or consent of complainant, and for these reasons if such deposition be taken motion will be made to strike the same from the trial.

By Mr. HICKS.—Plaintiff has taken no testimony in this suit up to the present time, although plaintiff has had ample opportunity so to do. In view of the circumstances set forth in the foregoing statements of said counsel and because the witness has come on from Pittsburg, Pa., to New York and because the witness resides more than two thousand miles from the place of trial and cannot therefore be produced at the trial and because defendant is entitled to take the testimony [621] of this witness to show the state of the prior art and will ask the Court for leave to amend the answer, according to the notice heretofore given, the deposition of the witness will be taken and the Court will be requested to make such ruling as will meet the end of justice.

Q. 1. Please state your name, age, residence and occupation.

A. Paul Kohler, age 51; residence, Pittsburgh,

(Deposition of Paul Kohler.)

Pa., sheet metal worker.

Q. 2. How long have you been occupied as a sheet metal worker? A. Thirty-five years.

Q. 3. Did you ever make a horn for a phonograph; and, if so, when and where ?

A. In the year 1888 being employed by Duffey & Clark, 518 Grand St., Pittsburgh, Pa., I made a horn as sample showing and two or three months later on made from five to six more.

Q. 4. Who were Duffey & Clark?

A. Duffey & Clark was the proprietors of that tin shop.

Q. 5. Did anyone assist you in the making of the horn first made in 1888?

A. John King, general foreman of said shop, helped to assist on said horn.

Q. 6. Did John King assist you in the making of the additional five or six horns made two or three months after the making of the first horn?

A. He did so.

Q. 7. Now, please state what you and John King did in the making of these horns for phonographs in the year 1888, describing first the making of the first horn and then the making of the additional 5 or 6 horns.

A. John King as general foreman of said shop cutting the pattern for said horn which were in tapering strips, instructed me to cut 16 of said strips out of tin to form one horn. John King, after the strips were cut, assisted to help to put those strips in proper form, which formed a bell-shaped horn.

(Deposition of Paul Kohler.)

Q. 8. How many patterns did John King make or devise for the cutting of the 16 strips, of the metal horn? A. One pattern.

Q. 9. What was the shape of the pattern?

A. The shape of the pattern was $3\frac{1}{2}$ to $3\frac{3}{4}$ " at one end, tapering down to $\frac{3}{4}$ of an inch.

Q. 10. Describe the way or manner in which the pattern tapered on the side from *one* to the other.

A. At one end of said strips there was formed what tinnerns call a standing seam, double on one side and single on the other; said strips clinched together and soldered on the inside.

Q. 11. Describe the way in which the sides of the tapering strips ran, that is to say, what kind of line was formed by each side of the tapering strips.

A. The said tapered strips had curved lines on both sides in order to get the bell-shaped horn.

Q. 12. Was any material used to cause the parts forming the seams to adhere together; and if so, what was the material used?

A. The material in said horns was common roofing-tin.

Q. 13. What I want to know is what was done to join together the seams formed by turning over the edges of the strips in the manner you have described.

A. The one side of the flaring strips was turned up on a right angle and turned over this single edge on the following strip.

Q. 14. I understand that you turned up one edge of one strip at a right angle; and that you bent or turned the edge of the next strip so that it would

(Deposition of Paul Kohler.)

fold over the turned-up edge of the adjoining strip. Now what I want to know is how you made these two stick together.

A. By soldering said strips on the inside.

Q. 15. You say that you soldered on the inside. Just what do you mean by the "inside"?

A. That is we soldered the inner side where the two strips met. [623]

Q. 16. Describe the shape of the wide end of each of these 16 strips.

A. The strips of said horn run in the length of 26 inches, $3\frac{1}{2}$ to $3\frac{3}{4}$ " at one end down to $\frac{3}{4}$ " at the other end. The said strips had a circular cut on the large end.

Q. 17. Was the horn made up from anything beside the 16 tapering strips?

A. No, they were not. All horns that were made, to my knowledge, for the firm of Duffey & Clark had 16 strips to the horn.

Q. 18. Was any provision made for connecting the horn made of the 16 strips with the phonograph?

A. After the 16 strips were put in proper position to form said horn, on the smaller end was placed a tapering tube about 6" long, 3" on the larger and about $\frac{3}{4}$ " on the small end; also was placed a tube on the small end $\frac{3}{4}$ " in diameter and about $1\frac{1}{4}$ " to $1\frac{1}{2}$ " long, a straight tube to receive a piece of hose.

Q. 19. Have you recently made a sample of the first horn made by you and John King in 1888?

A. I have.

Q. 20. Will you please produce the sample?

(Deposition of Paul Kohler.)

A. There it is.

Q. 21. How did you come to make this sample and when did you make it?

A. This sample horn shown on the floor was made about two weeks ago for Mr. J. D. Meyers.

Q. 22. Who is Mr. J. D. Meyers?

A. Mr. J. D. Meyers represents a law firm in Camden, New Jersey.

Q. 23. Who requested you to come here to New York and testify?

A. Mr. Nichols, manager of the Pittsburgh firm of the Columbia Phonograph Co.

Q. 24. Is Mr. John King or Mr. Duffey or Mr. Clark of the firm of Duffey and Clark still living?

A. Mr. Clark and Mr. Duffey, also John King, have passed away.

Q. 25. Is there anybody that you know, who saw the first horn that you and John King made in 1888?

[624]

A. I do. From 6 to 8 men in the city of Pittsburgh at the present time will confirm my statements.

Q. 26. Please give the names and addresses so far as you can of these 6 or 8 men who saw this horn in 1888.

A. John King, Jr., Robert Siegfried, Christ Coulter, Mr. Keely, I don't know his first name; I could not tell the addresses of said men.

Q. 27. Do they live in Pittsburgh, Pa.?

A. They do live in Pittsburgh, Pa. I could find the addresses very easily in Pittsburgh and locate said parties.

(Deposition of Paul Kohler.)

Q. 28. Will you kindly find the addresses and locate the said parties and let me know them in order that I may have them and in order that I may furnish the names and addresses to plaintiff's counsel?

A. I will gladly do so.

Q. 29. Please state whether the sample or model horn that you have produced correctly represents the first horn made by you and John King in 1888.

A. It does, as near as I possibly could do.

Q. 30. Is *there particular* point about which you have any doubt, in making this sample horn?

A. None, whatever.

By Mr. HICKS.—The sample horn produced by the witness is offered in evidence and marked "Defendant's Exhibit, Model Kohler-King Horn of 1888, Frank Z Demarest, Examiner."

By Mr. DUNCAN.—Same objections as stated by complainant's counsel at the opening of this deposition.

Q. 31. How did the 5 and 6 additional horns compare with the first horn made by *your and* John King in 1888?

A. The additional 5 or 6 horns were made of the same pattern, same shape and all.

Q. 32. By "pattern" do you refer to the pattern which John King provided for the cutting of the longitudinal strips?

A. By that pattern which John King cut for the first horn.

Q. 33. Was there any difference between the additional 5 or 6 horns [625] and the first horn?

(Deposition of Paul Kohler.)

A. None, whatever.

Q. 34. For whom were these horns made in 1888?

A. After the first horn was made I understood that there was a company located in the Anchor Bank Building on 5th Ave., Pittsburgh, Pa., where they used these horns for talking machines.

Q. 35. When did you obtain the information that the horns that you and John King made were intended for use on talking machines?

A. Shortly before we started our five or six horns later on.

Q. 36. How do you fix the date as the year 1888 when you made these horns with John King in Pittsburgh?

A. By the celebration of the one hundredth anniversary of Alleghany County, Pa.

Q. 37. Please compare the date at which you made these horns, together with John King, with the date of the World's Fair at Chicago, 1893?

A. There is about five years difference.

Q. 38. Did you make these horns before or after the World's Fair? A. Before.

Q. 39. Is there any name by which the seam or ribs shown on the model horn which you have produced is known?

A. The ribs on said horn are called in our trade the standing seam.

Q. 40. For how long have you been familiar with the standing seam?

A. From 25 to 30 years. Said *join* is also used in all angles and elbows.

(Deposition of Paul Kohler.)

Q. 41. In order to obtain the bell shape of this model horn which you have produced how was it necessary to cut the longitudinal strips of which the bell of the horn is made?

A. It is impossible to cut said strips perfectly straight and give the horn the bell shape. Said strips must be cut on a flare.

Q. 42. Is there anything else that you think important to state with regard to the construction of these horns by you and John [626] King in 1888, in order to acquaint the court fully in regard to the facts?

A. Not that I know of outside of what I have said.

Adjourned to Tuesday, October 28, 1913, at 10:00

A. M., same place.

PAUL KOHLER.

Read over, sworn to and subscribed by the witness, Paul Kohler, in my presence this 28th day of October.

[Seal] FRANK Z. DEMAREST,
Notary Public in and for the City, County and State
of New York.

October 28, 1913.

Met pursuant to adjournment.

Present: Counsel as before.

Direct examination closed.

By Mr. DUNCAN.—Complainant's counsel again points out that there is no justification in the answer for the taking of the deposition of this witness and that the taking of the same therefore is outside of the issues of the case and is without authority of

any statute or order of the Court, but is in violation of the statutes and rules governing procedure in equity cases. It is further pointed out that this deposition has been taken over the protest of complainant's counsel after the expiration of the time limited to defendants to take their proofs for use on the trial of this case and that no order of Court or consent of opposing counsel has been obtained, extending defendant's time to take the deposition of this witness. Complainant's counsel repeats the objection made at the opening of this deposition and now moves that the deposition in its entirety be suppressed. In view of the circumstances under which the deposition is taken, complainant cannot properly be called upon to recognize the deposition or to cross-examine the witness and for these reasons complainant's counsel declines to cross-examine the witness. It should further be noted that this case is set for hearing on the November term of the District Court in San Francisco and in order that complainant may complete its proofs in the east for use at such trial it will be necessary for complainant to proceed immediately answering those proofs properly taken by defendants under the order of Court. Complainant's counsel has several times extended defendant's time under this order to recall the witness Hawthorne and the time is so short now that it is impossible for complainant to enter upon any new investigation or to take any further proofs than proofs in connection with evidence already properly taken by defendants [627]

within the order heretofore made. And for this reason also complainant's counsel declines to recognize the deposition of the witness Paul Kohler and declines to cross-examine him.

By Mr. HICKS.—The objection made by complainant's counsel to the deposition of the witness Paul Kohler, is entirely technical and in view of the circumstances is clearly oppressive. At the request of complainant's counsel, the witness, who had been brought on from Pittsburgh at considerable expense, remained over night in New York in order that he might be cross-examined by plaintiff's counsel. In view of the fact that practically all of defendant's evidence has necessarily been taken in the east at such a great distance from the place of trial and because it was absolutely impossible for defendant to make a motion for leave to amend the answer before taking the deposition of the witness Kohler and since the answer can be amended by the Court in its discretion to conform to the proofs and since plaintiff's counsel has been present upon the direct examination of the witness and is now present and can cross-examine the witness and since it would involve great expense and loss of time to produce this witness again for examination or cross-examination, defendant's counsel gives notice that a motion will be made for an order permitting the deposition of the witness to stand, *nunc pro tunc*, and amending the answer and requiring plaintiff's counsel to cross-examine the witness at Pittsburgh, Pa., if plaintiff's counsel desires to cross-examine the witness. It is obvious that the *court* pursued by

plaintiff's counsel is unjust and obstructive and would involve the parties in great expense and loss of time, which can now be obviated by the cross-examination of the witness. For these reasons defendant's counsel requests plaintiff's counsel to proceed now with the cross-examination of the witness, reserving, if he desires, his objections in order that the whole matter may be presented to the Court and the difficulties pointed out avoided.

By Mr. DUNCAN.—The objection raised by complainant's counsel is not a technical one. This case is set for a hearing in San Francisco next week and complainant's counsel is advised that the case will be heard at that time. At the request of defendant's counsel several extensions have been granted defendants to enable them to take testimony within the issues raised by the pleadings and to complete the depositions of certain witnesses called by defendants when they commenced taking their proofs in the east. It is only by proceeding with the greatest expedition that complainant can complete its proofs in time for use on the trial, the bulk of complainant's proofs necessarily being taken in the east; and it is submitted that there is nothing technical in objecting to the defendants, after they have taken over four hundred pages of depositions relating to various alleged prior uses, suddenly interjecting a new defense into the case and endeavoring, at this time, to take testimony relative thereto without order of Court, when it is apparent that it would be impossible for complainants to make investigation relative to the alleged new defense or to take re-

buttal proofs concerning the same in time for the trial. Complainant's counsel therefore declines to take any step such as cross-examination, that would directly or indirectly recognize the deposition given by the witness Kohler. [628]

By Mr. HICKS.—The testimony of the witness Kohler is newly discovered evidence, of which defendant's counsel first obtained notice on October 24, 1913. Defendant's counsel was unable to communicate with the witness until yesterday, when the witness appeared to give his testimony. This suit has been brought in the far west as a test suit, with regard to horns manufactured and sold in the east. It is the express purpose of Mr. Miller, plaintiff's counsel, to attack the American Graphophone Company, Thomas A. Edison, Incorporated, The Victor Talking Machine Co. and other companies making and selling talking machines or horns for talking machines. This suit is an important one and defendant's counsel has been devoting his entire time to it. The public is interested in this attempt to enforce a patent clearly shown to be invalid by the testimony of the witness Kohler and by the other evidence introduced by defendant. Defendant is entitled to a fair trial upon all the evidence that can be adduced and if plaintiff requires additional time to investigate the subject matter of the testimony of the witness Kohler, defendant's counsel is perfectly willing that plaintiff shall have it and that plaintiff shall have all reasonable opportunity to present its case fully in court.

Defendant's counsel understands that plaintiff's

counsel makes no objection to the deposition given by the witness, E. A. Hawthorne, on October 27, 1913, upon the ground that defendant's time to take depositions had expired.

By Mr. DUNCAN.—Defendant's counsel, prior to the taking of the further deposition of Mr. Hawthorne on October 27, asked complainant's counsel for permission to recall Mr. Hawthorne and examine him further; and complainant's counsel agreed that Mr. Hawthorne might be recalled on Oct. 27. For this reason no objection is made to the deposition of Mr. Hawthorne taken on Oct. 27, on the ground that it was taken after the expiration of the time limited by the order fixing time for taking testimony.

Deposition closed.

By Mr. DUNCAN.—As to all depositions taken by defendant's counsel in the east in these suits before Frank Z. Demarest, Notary Public, and Alexander Park, Notary Public, except, however, the deposition of Paul Kohler, complainant's counsel waives the signing of said depositions by the witnesses and the readings of said depositions by the witnesses. [629]

[Notarial Certificate to Depositions of Walter H.
Miller et al.]

*District Court of the United States, Northern Dis-
trict of California, Second Division.*

IN EQUITY—No. 18.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

PACIFIC PHONOGRAPH COMPANY,

Defendant.

State and County of New York,—ss.

I, Frank Z. Demarest, a notary public in and for the City, County and State of New York and Southern District thereof, duly commissioned and sworn, do hereby certify that the above-named witnesses, Walter H. Miller, Harvey Nesbitt Emmons, Edward W. Meecker, Frank H. Stewart, John Kaiser, Camillus A. Senne, Ellsworth A. Hawthorne, John H. George, William A. Lawrence, William Edwin Parker and Eugene Henry Byrnes and Paul Kohler, were each by me first duly cautioned and sworn to testify the truth, the whole truth and nothing but the truth and were carefully examined; that their depositions and each of their depositions were reduced to typewriting by Miss Josephine Nessler, under my personal supervision, and by no other person, in the presence of the witnesses themselves and of each of them from the statements of the witnesses and each of them; that the depositions of said

witnesses and of each of them were taken in the presence of counsel for both and each of the parties in the above-entitled suit, who waived the signature of the said witnesses and of each of them to their respective depositions and waived the reading of said depositions and of each of them by the respective witnesses, except the deposition of Paul Kohler, who read over his said deposition and signed his name thereto in my presence; that said depositions and each of them were taken pursuant to notice at the times and places stated above, except the deposition of said Paul Kohler, whose deposition was taken as set forth in the above remarks of counsel; [630] that plaintiff was represented at the taking of such depositions by Mr. John H. Miller and by Mr. Frederick S. Duncan, and that the defendant was represented by Mr. Louis Hicks as stated above in said depositions; that the several exhibits were offered in evidence and marked as specially noted in the said depositions; and that I am not of counsel or attorney to either of the parties in the above-entitled suit nor interested in the event of the cause.

Dated this 28th day of October, 1913, at the city, county and State of New York.

[Seal] FRANK Z. DEMAREST,
Notary Public in and for the City, County and State
of New York.

[Endorsed]: Filed Nov. 5, 1913. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk. [631]

(Title of Court and Cause.)

**Deposition of Wm. J. Elwell, Esq., on Behalf of
Defendant.**

Meeting held pursuant to due notice at 705 Witherspoon Building, Philadelphia, Pennsylvania, October 10, 1913, at 10:30 A. M., for the purpose of taking proofs for final hearing in the above-entitled suit on behalf of the defendants in each of said suits, before Alexander Park, Esq., a Notary Public in and for the County of Philadelphia, Commonwealth of Pennsylvania, acting as Examiner.

Present: FREDERICK S. DUNCAN, Counsel for
Complainant.

FREDERICK A. BLOUNT, Counsel for
Defendant.

It is stipulated and agreed by and between counsel that the proofs about to be taken will suffice for both suits and that the witness Elwell shall be sworn in both suits and that the original copy of his deposition may be used in the suit first above-entitled and a carbon copy for the suit last above-entitled.

WILLIAM J. ELWELL, a witness called on behalf of the defendants being duly sworn, according to law, deposes and says in answer to interrogatories propounded by Mr. Blount as follows:

Q. 1. Please state your name, age, residence and occupation.

A. William J. Elwell; legal age; 2237 South 68th Street; Manager, Talking Machine Department, C. J. Heppe and Sons, Philadelphia.

Q. 2. Where do C. J. Heppe & Son, have their place of business in Philadelphia?

(Deposition of Wm. J. Elwell, Esq.)

A. 1115-17-19 Chestnut Street.

Q. 3. What is the business of C. J. Heppe & Son?

A. Dealers in pianos, talking machines and sundry musical instruments.

Q. 4. How long have you been manager of the Talking Machine Department of C. J. Heppe & Son?
[632]

A. Since October, 1898.

Q. 5. What are your duties as such manager?

A. Purchase all stock pertaining to the Talking Machine Department, as well as the general supervision of that department.

Q. 6. Do you know of any concern called Hawthorne & Sheble or Hawthorne & Sheble Manufacturing Company?

A. I knew that there was such a concern under both names.

Q. 7. How far back does your knowledge go?

A. In 1897 the firm of Hawthorne & Sheble was in business at 6th and Chestnut. Afterwards the firm of Hawthorne & Sheble Manufacturing Co. were located at Oxford or Mascher and Jefferson, I think.

Q. 8. What was the business of Hawthorne & Sheble and its successor, if you know?

A. Dealers in talking machines and manufacturers of talking-machine supplies, cabinets and repair parts, horns, and other paraphernalia used in the talking-machine business.

Q. 9. Did you as manager of C. J. Heppe & Son, ever have any business dealings with Hawthorne & Sheble or its successor? A. I did.

(Deposition of Wm. J. Elwell, Esq.)

Q. 10. What were these dealings?

A. Purchase of talking-machine supplies, cabinets, carrying cases, horns, etc.

Q. 11. Please describe the horns which you, on behalf of C. J. Heppe & Son, which you purchased from Hawthorne & Sheble or its successor. By this I mean describe the different types of horns?

A. I purchased a variety of types of horns. Horns were both for the Edison and Victor Talking Machine of the conical and also of the flower type.

Q. 12. Please describe in your own words the construction of the horns which you have referred to as the "flower type"? [633]

A. What was known as the flower type horn was made up of a number of sides and in shape resembled the morning-glory flower.

Q. 13. I show you a paper and ask that you tell me what you know about it?

A. This circular letter was received by me on or about April 15th or 16th, 1904.

Q. 14. Do you recognize the signature subscribed at the end of the letter?

A. To the best of my knowledge and belief it is the signature of Mr. Sheble of the Hawthorne & Sheble Co.

Q. 15. How was this letter delivered to C. J. Heppe & Sons?

A. Through the United States mails.

Defendants' counsel offers in evidence the paper shown the witness and the same is marked "Defendants' Exhibit, Circular Letter of April 15th,

1904, of Hawthorne & Sheble Manufacturing Company."

By consent of counsel, the copy of the above exhibit is now spread upon the record as follows with the same force and effect as the original letter and it is stipulated that the original letter may be withdrawn subject to inspection if desired by complainants' counsel.

[Defendants' Exhibit, Circular Letter of April 15, 1904, of Hawthorne & Sheble Manufacturing Company.]

Horace Sheble, Vice-Pres. and Treas.

Ellsworth A. Hawthorne, President.

El Dorado Manley, Secretary.

**HAWTHORNE & SHEBLE MANUFACTURING
COMPANY.**

Incorporated State of Pennsylvania.

Manufacturers and General Sales Agents.

Talking Machines and Supplies.

Sporting Goods Cabinets.

Office Specialties.

General Novelties.

Factory and Office:

Mascher and Oxford Streets. [634]

Philadelphia, Pa., U. S. A. Cable Address:
Wholesale Export. "Shebthorne, Philadelphia"
A-B-C and Liber's Code Used
Local and Long Distance
Telephones.

Philadelphia, Pa., U. S. A., April 15th, 1904.
Station "O."

Dear Sir:

For over a year past we have been working on new model horns to which we could apply a Silk Finish, as the trade are now universally accepting such a finish as a standard of merit. We have had our models ready for some time past, but have been somewhat delayed in their manufacture.

Our patents which have been allowed on Silk Finish Horns will cover the finish on these horns, and we have under way patents to cover the new shapes which we are adding to our line.

The new horns will be known as the "Flower Silk Finish Horns." They are made of long steel sections joined together and tapering throughout their length like the petals of a flower.

The outside will be "Silk Finish" with gold strips between the petals, and the inside handsomely decorated to represent a flower such as a Morning-glory, Lily, etc. The effect is certainly very attractive, as they are by far the handsomest horns which have ever been produced, and will undoubtedly meet with an enormous sale.

We are now placing on the market
For Cylinder Machines

#0 3024 Flower Horn, Length 30 in., width of bell
24 in.

For Victor Tapering-arm Machines.

#0 2824 Flower Horn, Length 28 in., width of bell
24 in.

Write for quotations.

Yours very truly,
HAWTHORNE & SHEBLE MFG. CO.,
Per H. SHEBLE.

Dict. H. S. [635]

Q. 16. Can you recall any specific purchase of horns of the flower type from Hawthorne & Sheble Manufacturing Company?

A. Not without consulting the books in which I kept a record of such purchases.

Q. 17. Have you such a book with you?

A. Yes, sir.

Q. 18. You may consult the book which you have produced and then state whether or not you can recall any specific purchase of horns of the flower type from Hawthorne & Sheble Manufacturing Company.

A. The first record I appear to have of the purchase of the flower horn was on June 23d, 1904.

Q. 19. Please state what that record shows?

A. On that date my record showed that I received from Hawthorne & Sheble Manufacturing Company, one No. 0 3024 Flower horn, one No. 0 2824 flower horn.

(Deposition of Wm. J. Elwell, Esq.)

Q. 20. Who made the entry in the record which enables you to testify as you have?

A. The entries are made in my own handwriting.

Q. 21. What significance, if any, does the numbers of the horns have to you?

A. The number in this case designates the size and style of finish of the horn.

Q. 22. Taking each number, please show how it enables you to determine the size and finish of the horn to which it is applied?

A. The number 0 3024 tells me that the horn was intended for an Edison machine, that the horn is 30 inches long with a 24-inch flare of bell and the 0 tells me that the horn is silk finish. The number 0 2824 tells me that the horn was made for use on a Victor Talking Machine 24-inch flare of bell with an equivalent length of 28 inches and the 0 indicates that it was of silk finish. [636]

Q. 23. When did you make the entry in the records to which you have just been referring?

A. On the date given as the date of the record.

Q. 24. And what is that date?

A. June 23d, 1904.

Defendants' counsel offers in evidence page 114 of the book produced by the witness on which page appears the entry referred to by the witness, and the same is marked "Defendants' Exhibit Page 114 of Stock Book of Heppe & Son."

Defendants' counsel states that the stock book of Heppe & Son just referred to is the property of C. J. Heppe & Son and that the witness informs coun-

(Deposition of Wm. J. Elwell, Esq.)

sel that he has no right to let this book out of his possession. Complainants' counsel is requested, therefore, to stipulate that this exhibit shall be subject to the provisions of the stipulation entered into regarding "Defendants' Exhibit Circular Letter of April 15th, 1904."

Direct examination closed.

Cross-examination by Mr. DUNCAN.

XQ. 25. Do I understand that the book that you have produced is the regular stock-book of Heppe & Son in which were regularly entered all purchases of phonograph parts and supplies as received each day? A. It is.

XQ. 26. The entries in this book commence with December 29, 1902, and continue regularly up to June 23, 1904, and from that date on to and including Tuesday, October 8th, 1907, do they not?

A. December 29th, 1902, up to October 8th, 1907, inclusive.

XQ. 27. Were you asked by defendants' counsel to go through this book with a view of finding the earliest entry of the purchase by your company of a horn of the flower type? A. I was not.

XQ. 28. Were you asked by any one to go through this book for that [637] purpose?

A. I was not.

XQ. 29. As a matter of fact have you gone through this book for the purpose of finding the earliest entry of the purchase of a horn of the flower type? A. I did.

XQ. 30. And the entry that appears on page 114

(Deposition of Wm. J. Elwell, Esq.)

is the earliest entry of the purchase of a horn of the flower type?

A. To the best of my knowledge it is.

XQ. 31. After the purchase by your firm from Hawthorne & Sheble on June 23d, 1904, of a horn of the flower type, did your firm subsequently purchase other horns from Hawthorne & Sheble of the flower type? A. They did.

XQ. 32. Is it not a fact that toward the end of 1904 and particularly during 1905, your firm purchased horns of the flower type from Hawthorne & Sheble in considerable numbers?

A. I couldn't answer off hand without consulting the record, I haven't searched these records beyond June 23d, 1904.

XQ. 33. Referring to page 115 of the book you produced, please state whether there does not appear on that page an entry under date of June 27th, 1904, reading as follows:

“Tea Tray Co. 1 Morning-Glory Horn=XV Crating VA”?

By Mr. BLOUNT.—Question is objected to as inquiring into matters not inquired of in direct examination and on the further ground that page 115 of the book referred to has not been offered in evidence and protest is made against complainants' counsel reading into the record the matter which he has in his question.

A. The entry does. Yes, sir.

XQ. 34. Referring to the entry under date of September 2, 1904, at the bottom of page 145, please

(Deposition of Wm. J. Elwell, Esq.)

state whether it is not a fact that on that date your company bought a considerable number of the [638] flower type from the Tea Tray Company?

By Mr. BLOUNT.—Same objection and the question is also objected to as immaterial, irrelevant and incompetent.

A. 12 horns.

XQ. 35. Is it not a fact within your general knowledge that from the end of 1904 or thereabouts, a number of manufacturing companies put upon the market in large quantity the flower type of horn for phonographs?

By Mr. BLOUNT.—Objected to as inquiring into matters not inquired on direct examination and as being irrelevant, immaterial and incompetent.

A. I have simply hearsay knowledge, without any specific knowledge.

XQ. 36. Is it not a fact that your company commenced in the fall of 1904 and continuing down to practically the present time has purchased large quantities of the flower type of horn in place of the old B. and G. or old all brass horns that you had purchased prior to the introduction of the flower type?

By Mr. BLOUNT.—Same objection.

A. If I understand that question rightly you ask me whether we had purchased flower horns in place of B. and G. or all brass horns? If this is the case, I answer no.

XQ. 37. Is it not a fact that subsequent to the fall of 1904 and continuing for many years thereafter

(Deposition of Wm. J. Elwell, Esq.)

you purchased large quantities of the flower type of horn?

By Mr. BLOUNT.—Same objection.

A. That question I couldn't answer definitely without reading over my book of stock received.

XQ. 38. Is it not a fact that the popular type of horn since early in 1905 has been the flower type of horn.

By Mr. BLOUNT.—Same objection and also objected to as calling for a conclusion. [639]

A. Of recent years the popular horn has been the flower type.

By COMPLAINANT'S COUNSEL.—In view of the request made by defendants' counsel regarding the stock-book of Heppe & Son, complainants' counsel is willing to stipulate, that a copy of page 114 or of the particular entry on that page referring to the flower horn may be spread upon the record with the same force and effect as the original stock-book in evidence and that the original book may be withdrawn provided that complainants' counsel may have access to that book if desired, at reasonable times and upon reasonable notice.

Defendants' counsel agrees to the proposition of complainants' counsel and the original exhibit is therefore withdrawn upon the conditions stated and a copy of the flower horn entry on page 114 is now spread upon the record as follows, and is marked "Defendants' Exhibit, Page 114 of Stock-book of Heppe & Son":

[Defendants' Exhibit, Page 114 of Stock-book of
Heppe & Son.]

Jun. 23, 1914.

Hawthorne & Sheble

1 #03024 Flower Horn

1 #02824 " "

[Written in pencil over face of above entry:] "E"

XQ. 39. Do I understand that the entry above offered in evidence represents your first knowledge of the flower type horn made by the Hawthorne & Sheble firm or company? A. It does not.

XQ. 40. Did you personally receive this letter of April 15, 1904, of Hawthorne & Sheble Mfg. Co., which has been offered in evidence?

A. Not directly; it came through in the general way that mail comes through in the house and possibly reached me within half an hour after its delivery.

XQ. 41. Have you at the present time any recollection of receiving this letter apart from the fact that you find it in your files and therefore assume that you must have received it like other letters in your files?

A. I have no definite knowledge, other than finding it in my files. [640]

XQ. 42. Are you sure that this letter was actually brought to your attention to which you had knowledge of the flower horns of Hawthorne & Sheble referred to therein prior to your receipt of the horn on the 23d of June, 1904?

A. I had prior knowledge of it from hearsay. By it, I mean the flower horn.

(Deposition of Wm. J. Elwell, Esq.)

XQ. 43. Prior to the receipt of the flower horn on June 23, 1904, had you actually examined any flower horn made by the Hawthorne & Sheble Co.?

A. To the best of my knowledge I saw and examined a flower horn made by Hawthorne & Sheble prior to the receipt of the horns mentioned on page 114 of the stock receipt book.

XQ. 44. About how long before June 23d, 1904, have you seen the first flower horn made by Hawthorne & Sheble?

A. Possibly three or four months.

XQ. 45. Did you at any time prior to your first examination of a Hawthorne & Sheble flower horn which you say was possibly two or three months before June 23d, 1904, know of a flower horn that was being offered for sale by Bettini & Co., in New York?

A. I never knew that Bettini had a flower horn.

XQ. 46. Did you, in the latter part of 1903, or early part of 1904, know of a concern called the Lily Horn Company? A. I did not.

XQ. 47. Did you, prior to the date that you say you first saw the flower horn made by Hawthorne & Sheble Company, see or hear of a flower horn made by a man named Nielsen?

By Mr. BLOUNT.—Question objected to as calling for hearsay evidence.

A. I did not.

XQ. 48. Did you prior to the time when you saw the Hawthorne & Sheble flower horn as above stated by you, see a flower type horn on the market made by any other concern? [641]

(Deposition of Wm. J. Elwell, Esq.)

A. To the best of my knowledge the only flower horn I ever saw prior to that time was made by Hawthorne & Sheble.

Cross-examination closed.

No redirect examination.

Deposition closed, signature of witness and certificate of examiner waived.

(Title of Court and Cause.)

Certificate of Notary [as to Deposition of William J. Newell].

State of Pennsylvania,
County of Philadelphia,—ss.

I, Alexander Park, a notary public in and for the State of Pennsylvania, city and county of Philadelphia, do hereby certify that William J. Elwell, was by me first duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth, and was carefully examined; that his deposition was reduced to typewriting by C. A. Witmer, under my personal supervision, and by no other person, in the presence of said witness, William J. Elwell, from the statements of said witness; that the deposition of said witness was taken in the presence of counsel for both and each of the parties in the above-entitled suit, Searchlight Horn Co. v. Pacific Phonograph Co., who waived the signature of said witness to his deposition and waived the reading of said deposition by said witness and waived the examiner's certificate thereto; that said deposition was taken pursuant to notice at the time and place stated above; that plaintiff was

represented at the taking of such deposition by Mr. Frederick S. Duncan and that defendant was represented by Mr. Frederick A. Blount as stated above in said deposition; that the several exhibits were [642] offered in evidence and marked as specially noted in said deposition, that by consent of counsel the original exhibits were withdrawn and copies thereof spread upon the record in said deposition, as stated in the said deposition; and that I am not of counsel or attorney to either of the parties in the above-entitled suit of Searchlight Horn Co. v. Pacific Phonograph Co., nor interested in the event of this cause.

Dated this 21st day of October, 1913, at the city and county of Philadelphia, State of Pennsylvania.

ALEXANDER PARK, (Seal)

Notary Public,

705 Witherspoon Bldg., Philadelphia.

Commission expires Feb. 6, 1917.

[Endorsed]: No. 18. Filed October 25, 1913.
Walter B. Maling, Clerk. [643]

[Proceedings Had June 15, 1915, 10 A. M.]

In the District Court of the United States for the District of New Jersey.

No. 394.

SEARCHLIGHT HORN COMPANY,

Complainant,

vs.

VICTOR TALKING MACHINE COMPANY,

Defendant.

Deposition on final hearing taken on behalf of plaintiff at Room 723 Crocker Building, in the city and county of San Francisco, State of California, beginning Tuesday, June 15th, 1915, at 10 o'clock A. M., under the rules of practice in the Courts of Equity of the United States and the Statutes of the United States in that behalf made and provided, pursuant to notice heretofore served on defendant's attorney, and hereunto annexed; the same being taken before Herbert A. Bennett, a notary public, duly appointed and qualified under the laws of the State of California, the notary mentioned in said notice.

Present: JOHN H. MILLER, Esq., Counsel for Plaintiff.

N. A. ACKER, Esq., Specially Appearing
on Behalf of Messrs. Fenton & Blount,
Counsel for Defendant. [644]

By agreement of counsel for the respective parties the taking of depositions aforesaid is postponed until Thursday, June 17th, 1915, at 10 o'clock A. M. [645]

Thursday, June 17, 1915.

[Deposition of Baldwin Vale, for Plaintiff.]

BALDWIN VALE, being duly sworn, testifies as follows:

Mr. MILLER.—Q. State your name, age, residence and occupation.

A. Baldwin Vale; age, 39; residence, San Francisco, California; occupation, patent solicitor.

Q. How long have you been a patent solicitor?

A. Twenty years.

Q. Have you ever testified as an expert in patent cases?

(Deposition of Baldwin Vale.)

A. I have; I have testified in the case of Searchlight Horn Company vs. Sherman, Clay & Company, and others.

Q. You mean other cases besides that?

A. Other cases besides that.

Q. State briefly your qualifications enabling you to testify as an expert in a patent case.

A. By way of qualifications, I have been a patent solicitor for twenty years, as stated, in which profession it has been my duty to draw applications for patents for submission to the various patent offices of the world, and in this connection I have obtained a wide knowledge of the various arts and crafts, and in addition to that, I served an apprenticeship as an electrician and as a mechanical metal worker; have owned and operated my own shops and factories and have superintended the factories of others in the manufacture of agricultural implements, and the general class of manufacture involving the various commercial forms of metal, including sheet metal.

Q. Mr. Hunter, who has testified as an expert witness on behalf of the defendant, in his deposition says, that the intent and purpose of the Nielsen invention as shown in the Nielsen Patent in suit was to provide such rigidity to the [646] horn structure as would be sufficient to prevent vibrations of the horn. In other words, that his object was to eliminate vibrations of the horn. What have you to say in answer to that proposition?

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial, and it is not

(Deposition of Baldwin Vale.)

a proper statement of the testimony of the expert witness Hunter, and counsel is requested to read the testimony of the expert Hunter to which he directs attention; furthermore, the question is objected to as leading.

A. Shall I answer the question?

Mr. MILLER.—Q. Yes, go ahead.

A. This is an evident misconception of the intent of the Nielsen invention. Nielsen's object and intent is very clearly set forth in his patent; the object being to eliminate or minimize the mechanical metallic sounds set up in horns of this type. There is no suggestion in the patent that his primary object was the formation of a horn of great rigidity, or to eliminate vibrations. It would be practically impossible to construct a horn in such a manner as to eliminate vibrations.

Q. Please point out in the specifications of the Nielsen Patent what is there stated to be the object of the invention?

Mr. ACKER.—The question is objected to on the ground the patent is the best evidence of what is stated in the patent and what the object of the invention was; it does not call for the testimony of an expert as to the written document, or relative to the stated object.

A. In the Nielsen Patent, No. 771,441, dated October 4th, 1904, the paragraph on page 1, beginning with line 11, I will quote: "The invention relates to the horn of a phonograph [647] or other machine of this class; and the object thereof is to provide a

(Deposition of Baldwin Vale.)

horn for machines of this class which will do away with the mechanical, vibratory, and metallic sound usually produced in the operation of such machines and also produce a full, even, and continuous volume of sound in which the articulation is clear, full and distinct." I will call particular attention to the fact that he speaks of "mechanical, vibratory and metallic sound." He further discloses his object in lines 57, 58, 59 and 60, in which he states: "And it is the construction of the body portion of the horn as hereinbefore described that give thereto the qualities which it is the objects of this invention to produce."

There is no hint in this matter read nor in any other part of the patent that he intended to eliminate vibrations, or to construct a horn with rigidity as the primary object. I cannot improve upon his words in stating the object of the invention.

Mr. MILLER.—Q. Now, state whether or not the object of the invention, as quoted by you from the patent, was actually accomplished by Nielsen by means of the construction therein shown?

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial, and on the further ground that this witness has not been proven to possess the qualifications requisite to testify to matters of this kind.

Mr. MILLER.—Q. Read the question, Mr. Reporter.

(The Reporter reads the question.)

A. It is my opinion that Nielsen's construction did accomplish the objects intended and as set forth in

(Deposition of Baldwin Vale.)

his specifications. [648] The construction of the horn after the manner of Nielsen, formed by a multiplicity of narrow strips joined at their edges to form a horn substantially bell-shaped, flaring outwardly, the flare more abrupt near the outer or bell end, and having longitudinal ribs on the exterior of the horn would eliminate vibrations of wide amplitude and substitute therefor vibrations of narrow amplitude, and form a horn that would not introduce into the sound passing there through, any noises incidental to the vibration of the horn. The vibrations of narrow strips joined in the manner described and provided with ribs on the outside in a horn of that shape would be of such small amplitude that any sound or noise created thereby would be so weak that such sound would not be introduced into, or adulterate the music or other desired sound passing through the horn. This fact is best evidenced by the general adoption of the Nielsen horn when it was placed on the market, and which superseded practically every other form of horn then in use in the trade.

Mr. ACKER.—I move to strike the latter part of the answer from the record, as not being responsive to the question and as calling for a mere expression of the witness on matters relative to which he has no knowledge.

Mr. MILLER.—Q. In the doctrine or science of sound what relationship does the amplitude of the vibrations of the sounding body have toward the character of the sound itself?

A. The amplitude of the vibrations determines the

(Deposition of Baldwin Vale.)

intensity or loudness of the sound. A vibration of wide amplitude would cause a louder sound than a vibration of small amplitude. [649] This is evidenced in all stringed instruments, and by way of example I might cite that if a banjo string, or any mechanical string that is confined at both ends, is plucked strongly, the vibration of that string on both sides of its center will be wide in proportion to the length of the string, and the harder it is plucked the wider the amplitude of vibration, the louder the sound and the greater its carrying power and all other incidental facts. On the other hand, in a similar string of less length the vibrations would be of very much less amplitude; of less carrying power and less sound. In metal, taking a sheet of metal of say one square foot and striking it a blow, it would vibrate on both sides of the center in amplitude proportionate with the strength of the blow struck, and a smaller sheet similarly struck would have vibrations of less amplitude and consequently would make less sound.

Mr. ACKER.—Q. Will you repeat the question to the witness, Mr. Reporter?

(The reporter reads the question.)

Mr. ACKER.—I move to strike the answer from the record as not being responsive to the question.

Mr. MILLER.—Q. Are you familiar with the horns of the old art prior to Nielsen's invention, generally referred to as the B. & G. horn, consisting of a conical metal tube with a flaring bell attached to the end of it?

(Deposition of Baldwin Vale.)

Mr. ACKER.—The question is objected to on the ground that it is leading.

A. I am familiar with the type of horn known as the B. & G. Phonograph Horn.

Mr. MILLER.—Q. How long, approximately, have you been [650] familiar with horns of that character?

A. I cannot fix the date exactly when I saw the first horn of the B. & G. type, but I think it was about 1896 or 1897.

Q. Now please point out what differences, or illustrate the differences, if any, between the vibrations caused in a horn of the B. & G. type by the passage of music through it and the vibrations caused in the sectional metal horn of the Nielsen type by the passage of the same music through it?

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial.

A. The B. & G. type of horn being constructed in the body portion of one strip, which was the general practice, would set up vibrations of wide amplitude because of the length of the strip from edge to edge, and because of the peculiar shape of the bell, which was of a separate piece joined to the body portion at the big end, being of one piece and of relatively large size said bell would set up vibrations of its own of wide amplitude. The sound passing through such a B. & G. type of horn would be interfered with, or distorted, or adulterated by the vibrations of wide amplitude in the horn that would create sounds or noises of sufficient volume or amplitude to distort or

(Deposition of Baldwin Vale.)

interfere with the sound waves passing through the horn. On the other hand, a horn of the Nielsen type constructed on a multiplicity of strips tapering outwardly and joined at their edges and provided with ribs running longitudinally of that horn on the exterior, and the horn being shaped similarly to a bell with the flare or taper abrupt near the outer end, the vibrations set up in these narrow strips would be of relatively narrower [651] amplitude, and so narrow that any sound, if any, emanating from the vibrations of these strips, would be so weak that it probably would not interfere audibly with the sound passing through the horn. In addition to the vibrations of small amplitude, due to the narrowness of the strips forming the horn, the shape of the horn and the ribs would contribute to the excellence of the result of passing the music or other desired sound through a horn of this Nielsen type.

Mr. MILLER.—Q. Mr. Hunter also says in his deposition that Nielsen contributed nothing of value to the art by his patent, which is in suit here. What have you to say on that subject as to whether or not Nielsen contributed anything to the art?

A. That is merely Mr. Hunter's opinion with which I differ entirely, and my opinion is backed up by the adoption by the trade of the Nielsen type of horn in preference to any other of then existing horns.

Mr. ACKER.—I move to strike the latter part of the answer from the record on the ground that there has not been any proof on the part of the qualifica-

(Deposition of Baldwin Vale.)

tions of this witness relative thereto.

Mr. MILLER.—Q. I find in the specifications of the Nielsen Patent the expression “Tapers outwardly” as applied to the body portion of the horn, the language being: “The main part a of the horn is bell-shaped in form and tapers outwardly gradually,” and so forth. Please state what is meant in the art by the expression “tapers outwardly”?

A. It means that the horn tapers outwardly in plan; that is, a silhouette of the horn would show it tapering outwardly, one end being wider than the other. [652]

Q. I also find in the patent the expression: “Outwardly directed flanges” as applied to the flanges connecting the metal sections together and forming ribs on the outside. State what is meant by the expression “outwardly directed flanges”?

Mr. ACKER.—I will ask counsel to state in the record wherein the language referred to in the last question appears in the patent.

Mr. MILLER.—It appears in claim two of the patent.

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial, and as calling for the witness to construe the expressions of the claims of the patent, which is the sole province of the Court and not of the witness; and I will add the further objection that it is objected to on the ground as being leading.

A. The strips that form the horn have flanges bent up at their edges. The expression means that these

(Deposition of Baldwin Vale.)

flanges extend outwardly with reference to the interior of the horn and are on the outside or exterior of the finished horn.

Mr. MILLER.—Q. In the drawing and description of the Nielsen Patent the outwardly directed flanges are there shown as being formed by bending the adjoining edges of two pieces of metal at right angles and abutting them together. By what name is that form of joining metals known in the sheet-metal art?

A. In the sheet-metal art that is known as a butt seam.

Q. Now, could any other form of seam be used to join those strips together in a Nielsen horn which would have outwardly directed flanges, and if so, please describe the same?

A. There are many forms of seam and there were many forms of [653] seam available to Nielsen in the sheet-metal art at that time, and long prior to Nielsen in which these strips could have been joined by a seam having outwardly directed flanges, the flanges being joined together in a variety of ways. In fact, most seams of sheet metal start with outwardly directed flanges and the flanges are interlocked and joined together in many ways.

Q. Are you familiar with the seam in the sheet-metal art known as the lock seam?

A. I am familiar with the lock seam, having made a great many of them with my own hands and also with my own hands in connection with machinery made for the purpose.

(Deposition of Baldwin Vale.)

Q. You may state briefly how a lock seam is formed between two pieces of metal.

A. The simplest description probably of a lock seam is to form oppositely disposed hooks on the edges of the two pieces of metal to be joined together, interlock these hooks and flatten the seam. Another manner is to provide outwardly extending flanges on the edges of the two strips to be joined, one of your flanges being longer than the other; then butt these flanges together and bend the longer flange down over the narrower one and then bend them both over and flatten down against the surface of the strip they overlie. There is another form of lock seam known as a double lock seam, called for short in the trade very often a double seam. This is formed as described in connection with the strips having upwardly or outwardly directed flanges, one longer than the other; the long flange being bent down over the shorter one and then both flanges,—there being then three thicknesses—are bent between the outer edge and the surface of the strip, [654] and then flattened down on to the strip over which they overlie. This gives a double locking of the flanges and is generally used where a hermetic seal or rigid rib is desired.

Q. Please compare the rigidity of the lock seam with the rigidity of a butt seam, assuming, of course, in each case the seam is made in the best possible manner known to the art?

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial.

(Deposition of Baldwin Vale.)

A. The rigidity of a butt seam formed of abutting flanges and a lock seam formed as described, about an equal amount of metal being used in each form of seam, would be equally rigid and equally stiff.

Mr. MILLER.—Q. As a mechanic skilled in the art, what would you say as to the mechanical equivalency or nonequivalency of a lock seam and a butt seam for joining two pieces of metal together in reproducing horns?

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial.

A. I would say that they were mechanically equivalent, as they are alternatives, and a mechanic would choose the form of seam in accordance with the desired result. They are both old in the trade and have been available for the purpose probably for many years prior to Nielsen.

Mr. MILLER.—Q. Mr. Hunter in his deposition says that in his opinion the Nielsen horn as shown in the Nielsen Patent possesses no advantages over the old B. & G. horn. Please state what you have to say on that point, and whether or not in your opinion the Nielsen horn does possess or does not possess any advantages over the old B. & G. horn.

Mr. ACKER.—The question is objected to on the ground [655] that the witness has not proven such qualifications requisite to respond to the question.

A. I disagree with Mr. Hunter, and it is sufficiently evident to a layman, or anyone except a deaf man that the Nielsen horn is superior acoustically in

(Deposition of Baldwin Vale.)

every particular to the B. & G. type of horn. The B. & G. type of horn is patterned after a trumpet or a form of wind instrument that was intended to set up vibrations of wide amplitude for the purpose of creating a loud sound or noise, and this inherent fact in that structure would render a horn of the B. & G. type practically unsuited for the purpose of amplifying or working in connection with a talking or mechanical apparatus in which it was intended that the sound propagated by the machine should be delivered to the hearer unadulterated by any sounds that might be created by the horn.

Mr. MILLER.—Q. What distinction is there between musical instruments of the horn type and a reproducing horn for a talking machine. In other words, what is the primary object of the musical horn?

Mr. ACKER.—The same objection as to the previous question.

Mr. MILLER.—Q. What is the primary object of the musical horn and the primary object of the reproducing horn?

A. The primary object of a musical horn such as a cornet, trombone or like instrument is to translate the vibrations of the lips of the player that give no sound in themselves and to translate those mute vibrations into musical notes that are created in and by the vibrations of the horn. In contradistinction it is the function of a phonograph horn to act as a vehicle for amplifying or making more audible [656] the sounds that are transmitted through it

(Deposition of Baldwin Vale.)

from the diaphragm of the phonograph. Obviously it is undesirable that the horn set up any vibrations audible to the hearer that would mix with or in any wise distort the sound waves passing through it and delivering the music or speech propagated by the diaphragm of the talking machine. A sound wave might be likened unto a bubble that might be kept afloat and directed on its course by gently tapping it or striking it blows of small amplitude, and on the other hand a blow of wide amplitude or of any great violence would distort or burst the bubble. So it is with a sound wave passing through the horn of a phonograph, a multiplicity of vibrations of small amplitude would direct or convey the sound wave on its course without distortion or adding to it any vibrations that would adulterate its purity. On the other hand, a horn through which the sound was passing that made vibrations of great amplitude would distort the sound waves in a manner to destroy the purity to the ears of the hearer.

Q. Can you refer to any official authority as sustaining you in any of the facts which you have given in regard to the mechanical construction of the horn shown in the Nielsen Patent and the terms of the art therein shown or referred to, and if so, please state what it is?

A. The first official confirmation of my views that occurs to mind is the charge of Judge Van Fleet to the jury in the case of Searchlight Horn Company vs. Sherman, Clay & Company, which sets forth the matter in better form and in as few words as seems

(Deposition of Baldwin Vale.)

possible, and I should like to quote that charge in answering the question.

Mr. ACKER.—I move to strike the answer from the record [657] as not being responsive to the question.

Mr. MILLER.—Q. Please refer to the transcript of record in that case and read from it into the present record the portion of the charge which you desire.

Mr. ACKER.—The question is objected to as incompetent, irrelevant and immaterial, and as not being the expression of a recognized authority on this subject.

A. I refer to the transcript of record in the case of Sherman, Clay & Co. vs. Searchlight Horn Company, in the Circuit Court of Appeals for the Ninth Circuit, No. 2306, at page 271:

“The invention consists of a horn for phonographs or similar instruments, and its objects are, as stated in the patent, to do away with the mechanical, vibratory and metallic sound usually produced in the operation of such machines, and to produce a full, even and continuous volume of sound in which the articulation is clear, full and distinct. The horn is constructed of metal strips secured together at their longitudinal edges by a seam, which produces ribs on the outside of the horn. In the patent this seam is shown as being a flanged or butt seam, and these flanges extend outwardly, thereby forming longitudinal ribs on the outside of the horn; the sheet-metal strips are curved or flexed outwardly,

(Deposition of Baldwin Vale.)

but this curve is more abrupt adjacent to the outlet of the horn or the mouth or large end, thereby producing a bell-shaped horn with a flaring outlet. This is the mechanical structure described in the specification, and after specifying the method of construction the patentee had added the following clause: [658]

‘My improved horn may be used in connection with phonographs or other machines of this class and changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its object.’

“Now, the invention actually covered by the patent does not reside in the particular form of the seam which joins the metal strips together. If the same result produced by the flanged seam shown in the patent as joining the metal strips together is obtainable by any other usual form of seam known at the time of Nielsen’s invention which operates in substantially the same way to produce the same result, then the substitution of such a seam would not be a departure from the invention, but would be within its real and true scope. The invention of Nielsen consists in the production of a horn for phonographs and similar instruments consisting of a combination of the various elements hereinabove described by me, and the essential characteristics of the Nielsen horn are the following:

1. It must be composed of a multiplicity of metal strips secured together at their longitudinal edges by a seam.

(Deposition of Baldwin Vale.)

2. This seam must be of such construction as to produce longitudinal ribs on the outer surface of the horn.

3. The strips are narrower in cross-section at the inner end than at the outer end.

4. The strips must curve outwardly from the inner to the outer end, but the curve is more abrupt adjacent the outer end.

Now combining these elements together in this way, [659] Nielsen produced a horn for phonographs and similar machines larger at one end than the other and having substantially a bell-shape and abruptly flaring outlet made up of longitudinally arranged metal strips secured together at their outer edges by a seam of such character as to produce longitudinal ribs on the outer surface.

“This is an explanation of the invention in colloquial language rather than in technical form, and I instruct you that it correctly represents the invention as protected by the claims in issue of the Nielsen Patent.”

Direct examination closed.

Cross-examination.

Mr. ACKER.—Q. Mr. Vale, you stated that you entered into your profession as a solicitor of patents at what time? A. Twenty years ago, in 1895.

Q. You were then in partners with a party by the name of Murdock? A. Yes, sir.

Q. What were your duties at such time in the office? A. I was a solicitor.

Q. Were you a solicitor or draughtsman?

(Deposition of Baldwin Vale.)

A. I was both.

Q. To what time did you remain in partnership or were associated with Mr. Murdock?

A. I think until the year 1902, when we dissolved; Mr. Murdock having been absent from San Francisco for something like two years.

Q. And when did that partnership commence?

A. In 1895.

Q. What were you engaged in prior to 1895?

A. I was with the Edison Light & Power Company.

Q. What were your duties in that company?

A. I was preparing arc lamps, winding helix coils and transformers.

Q. After the dissolution of the firm—I believe it was [660] Murdock & Vale, was it not?

A. Yes, sir.

Q. After the dissolution of the firm in 1902, did you then continue the soliciting business?

A. I have never dropped the soliciting of patents during all of my various other business ventures.

Q. Did you continue in business in this city as a solicitor of patents after the dissolution of the firm of Murdock & Vale? A. I did.

Q. Up to what time?

A. Up to the present time.

Q. Continuously?

A. Not in the city of San Francisco.

Q. Were you not employed in a harvest firm in Stockton?

A. I was employed in a harvest firm in Stockton.

(Deposition of Baldwin Vale.)

Q. When did you take employment with them, in what year? A. 1911 or 1912.

Q. And you remained with that firm for how long?

A. I remained as their superintendent for one year and am still in their employ.

Q. That is, you took your employment with them in 1911? A. Yes, sir.

Q. You are still in their employ?

A. I am still in their employ.

Q. In what capacity?

A. As a patent solicitor, an expert.

Q. Do you mean that you are retained at the present time in patent matters? A. Yes, sir.

Q. And to take out patents for them as applied to you? A. Yes, sir.

Q. You are not employed by the company as an employee for experimenting to take out patents?

A. My employment involves matters that do not relate to this present case, and which I cannot discuss. [661]

Q. Answer the question or not as you please. When did you return to San Francisco to engage in the patent soliciting business? A. In 1912.

Q. And since that time you have followed the profession of a solicitor of patents? A. I have, yes.

Q. Please state what experience you have had in connection with the phonographic business in connection with the manufacture of phonographic machines.

A. Early in my experience as a patent solicitor I had both a model maker and a client who were oper-

(Deposition of Baldwin Vale.)

ating on talking machines and I was witness to a number of experiments they made as to the shapes of horns and heard their discussions and heard records made and reproduced.

Q. Where did you see records made?

A. In the old Emma Spreckles Building.

Q. Were they made by any company?

A. They were made by a company that I do not know the name of. I think that the firm was Peter Bacigalupi.

Q. You are not sure of that, are you?

A. I am not positive of that.

Q. Is it from such time that your knowledge of the phonographic art dates? A. Yes, sir.

Q. And that knowledge was obtained by seeing devices made as to which you were taking patents on for said parties?

A. Yes, sir. That is not the extent of my experience with talking machines.

Q. What experience did you have other than that which you have just stated?

A. I have followed the development of the art as a matter of professional duty and curiosity, naturally taking an interest in that as well as other arts [662] and have been one of the severest critics of talking machines, as I never liked them and have always looked forward to the time when improvements would be made that would make them more desirable. I have used them in connection with dictation in my business and at one time had several inventions connected with them which I did not pat-

(Deposition of Baldwin Vale.)

ent. I have had occasion as a patent solicitor to prosecute applications on microphones and other telephonic instruments with a view to electrical amplifying sound transmitted over wire in which nearly every possible or known form of horn was used and many hydrid forms tested.

Q. Tested by you?

A. Tested by me and in my presence.

Q. And it is from the knowledge, I understand, so gained by you in your soliciting business that you qualify yourself as an expert in this line?

A. I do, and, in addition, to my knowledge of acoustics and sheet metals.

Q. When did you first make a comparison if at all between the Nielsen horn as a reproducer of sound and the B. & G. horn which you have testified to as a reproducer of sound?

A. In connection with my testimony in this case I made the first actual comparison.

Q. Please state how those comparisons were made. A. Those were audible comparisons.

Q. That is, you placed the Nielsen horn on a phonograph and listened to the reproduced sound and afterwards you placed a B. & G. horn on the phonograph and listened to the reproduction of the sound?

A. That is correct with the qualification that the same record was used in connection with the test on both horns and the same parts of the same record were tested on both [663] horns.

Q. And what was the test in duration of time?

A. Probably an hour or hour and a half.

(Deposition of Baldwin Vale.)

Q. Each horn? A. Both horns.

Q. Were different machines used for testing the horn, or the same machine?

A. I just stated the same machine was used on the same record in the same part of the record in the same room and at the same speeding of the machine.

Q. Were any of the tests made with the horns used on different machines, the machines being in operation at the same time or simultaneously.

A. I would not attempt a test like that because you could not test two horns operating simultaneously; they would conflict.

Q. Then, as I understand, you did not make any such test? A. No, sir.

Q. Please explain in detail the mechanical vibrations which set up in a horn when used as a reproducer of sounds in talking machines?

A. One form of mechanical vibration that often interferes with the horn is transmitted to it by induction. The mechanical grinding and scraping of the phonograph is transmitted throughout the whole metallic structure of the machine and reaches the sound by a metallic contact. In addition to this is the scratching and scraping of the reproducing needle on the surface of the record which is also transmitted to the horn and sets up a mechanical vibration through it, its molecular structure.

Q. What are the vibratory sounds which are set up in the reproducing horn?

A. Vibratory sounds would be set up in the horn

(Deposition of Baldwin Vale.)

also by the sound waves propagated by the talking [664] machine and passing through the horn.

Q. How do the vibratory sounds differ from the mechanical sounds?

A. Probably in the matter of the amplitude.

Q. Do you know? A. Yes, sir.

Q. How do they?

A. Take out "probably" from my answer.

Q. And your answer stands with the word "probably" taken out? A. Yes, sir.

Q. How do the metallic sounds differ from the mechanical sounds?

A. Well, the mechanical sounds are metallic.

Q. Then the mechanical and the metallic are the same? A. Yes, sir.

Q. That is your understanding? A. Yes, sir.

Q. How is one distinguished from the other during the operation of the machine and the use of the horn in connection therewith?

A. They are distinguished by the ear of the hearer.

Q. Which sounds of the three mentioned predominated, if any at all, in connection with the test you stated to have been made by you in the use of the B. & G. horn? A. Which sounds predominated?

Q. Yes.

A. The mechanical sounds set up and inherent in the structure of the horn as against the mechanical or metallic sound transmitted thereto by the machine.

Q. Which predominated in the reproduction of

(Deposition of Baldwin Vale.)

sound through the use of the horn as to which you have testified you made experiments?

A. Both the metallic and the mechanical sounds were sufficiently neutralized or minimized in the Nielsen horn as not to be disagreeably noticeable in the production of the music passing through the Nielsen horn.

Q. Did you notice them at all?

A. In occasional parts [665] of the record they would be slightly noticeable.

Q. Likewise the vibratory sound?

A. Well, all sounds are vibratory and the vibrations in the Nielsen horn are of such slight amplitude that they did not interfere with the propagated sound passing through the horn.

Q. As I understand from your testimony the only tests you have made were the ones referred to by you and as lasting for a period of time of probably an hour and a half?

A. I have made other tests of all of the exhibits that were produced in the Sherman, Clay & Company case so far as I could audibly and by rapping and otherwise setting these various horns in vibration and testing them by holding my finger on various parts of the horn and also by means of holding a pencil between my teeth and applying it to various parts of the horn set in vibration in various ways.

Q. Then your last answer is that you made tests of all the exhibits introduced in the Sherman, Clay & Company case. Did you make tests of the B. & G. horn introduced in evidence in said case where the

(Deposition of Baldwin Vale.)

body of the horn was made of two strips of metal?

A. I made tests of such a horn; I cannot say now I noticed at the time whether it was marked as an exhibit, or not. It was a B. & G. horn in Mr. Miller's office, composed of a body portion black and a bell portion brass.

Q. In that horn the body portion was made of one sheet of metal, was it not?

A. It was made of one or two, I am not positive now.

Q. Well, to refresh your memory there were two horns introduced in evidence, one of which the body portion was made of a single piece of metal and one of which the body portion was made of two pieces of metal. Did you make a test of that [666] horn?

A. I recall at the time there were two horns introduced and the reason I hesitated was because I did not know which one I had tested in this manner. I did not deem the fact of the horn being one piece or two relatively large pieces made very much difference.

Q. Did it make a difference between those two horns in the reproduction of sounds as far as minimizing the mechanical, vibratory and metallic sounds?

A. As I have stated in my testimony to-day, the amplitude of vibration in two strips would be less than the amplitude of vibration in a single strip equal in area to the two strips. Every seam and rib added minimizes the amplitude of the vibrations

(Deposition of Baldwin Vale.)

within the horn just that much. A multiplicity of strips and seams would minimize it just that much, just about that greater in extent. The smaller the strip the less the amplitude of vibration; the wider the strip the greater the amplitude of vibration.

Q. Have you any knowledge as to what is known in the art as a recording horn? A. Yes, sir.

Q. How does a recording horn differ from a reproducing horn?

A. A recording horn is generally used, so far as my knowledge extends—it consists of a trumpet-like smaller end with a flaring polygonal body or larger end. I saw such a horn in the studio of the Columbia Phonograph Company and was informed that that is the type of horn in general use by them. The horn was formed of sheet zinc.

Q. When did you see that horn for the first time?

A. I saw that horn about 18 months ago.

Q. Did you make any tests of the horn introduced in the Sherman, Clay and Company case, which you referred to, as an [667] exhibit, known as the Villy horn?

A. I do not recall that a Villy horn was admitted in evidence.

Q. You have no knowledge of a Villy horn being introduced in evidence?

A. It might have been, but I do not recall it to memory; there were so many exhibits introduced.

Q. You have no knowledge of the sound reproduction from the Villy horn? A. No, sir.

Cross-examination closed.

(Deposition of Baldwin Vale.)

(It is stipulated between counsel that the signature of this witness to his deposition be and the same is hereby waived.)

Mr. MILLER.—Plaintiff offers in evidence a Patent Office copy of letters patent No. 811,877, issued February 6th, 1906, to Camillus Antonette Senne of New York City, for a phonograph horn, the same to be marked Plaintiff's Exhibit Senne Patent No. 811,877, of February 6th, 1906.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Senne Patent No. 811,877 of February 6th, 1906.")

Mr. MILLER.—Also a Patent Office copy of United States Letters Patent No. 797,725 issued August 22d, 1905, to Charles J. Eickhorn, Assignor to the Tea Tray Company of Newark, New Jersey, the same to be marked Plaintiff's Exhibit Eickhorn Patent, No. 797,725 of August 22d, 1905.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Eickhorn Patent No. 797,725, of August 22d, 1905.")

[668]

Mr. MILLER.—Also a patent office copy of a design Patent No. 38,202, issued August 28th, 1906, to Charles J. Eickhorn, Assignor to the Tea Tray Company of Newark, New Jersey, on a design for an amplifying horn, the same to be marked Plaintiff's

(Deposition of Baldwin Vale.)

Exhibit Eickhorn Design Patent No. 38,202 of August 28th, 1906.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Eickhorn Design Patent No. 38,202 of August 28th, 1906.")

Mr. MILLER.—Also a Patent Office copy of a design Patent No. 38,273 issued October 9th, 1906, to Clement Beecroft, Assignor to the Tea Tray Company of Newark, New Jersey, covering design for a horn, the same to be marked Plaintiff's Exhibit Beecroft Design Patent No. 38,273 of October 9th, 1906.

Mr. ACKER.—The introduction of the document in evidence is objected to as incompetent, irrelevant and immaterial. (The document is marked "Plaintiff's Exhibit Beecroft Design Patent No. 38,273 of October 9th, 1906.")

Mr. MILLER.—Also a Patent Office copy of design Patent No. 38,274 issued October 9th, 1906, to Clement Beecroft, Assignor to the Tea Tray Company of Newark, New Jersey, covering a design for a horn, the same to be marked Plaintiff's Exhibit Beecroft Design Patent No. 38,274 of October 9th, 1906.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit

(Deposition of Baldwin Vale.)

Beecroft Design Patent No. 38,274 of October 9th, 1906.”) [669]

Mr. MILLER.—Also a Patent Office copy of United States Letters Patent No. 926,235, issued June 29th, 1909, to Paul B. T. Berner, Assignor to Searchlight Horn Company, of New York, the same to be marked Plaintiff’s Exhibit Berner Patent No. 926,235 of June 29, 1909.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked “Plaintiff’s Exhibit Berner Patent No. 926,235 of June 29th, 1909.”)

Mr. MILLER.—Also a Patent Office copy of United States letters patent No. 829,066, issued August 21, 1906, to Walter S. Fernan for a phonograph horn, the same to be marked Plaintiff’s Exhibit Fernan Patent No. 829,066 of August 21st, 1906.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked “Plaintiff’s Exhibit Fernan Patent No. 829,066 of August 21, 1906.”)

Mr. MILLER.—Also a Patent Office copy of a design Patent No. 38,602 issued June 4th, 1907, to Max Steiner, Assignor to the New Jersey Sheet Metal Company of Newark, New Jersey, covering a design for a phonograph horn, the same to be marked Plaintiff’s Exhibit Steiner Design Patent No. 38,602 of June 4th, 1907.

Mr. ACKER.—The introduction of the document

(Deposition of Baldwin Vale.)

is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Steiner Design Patent No. 38,602 of June 4th, 1907.")

Mr. MILLER.—Also a Patent Office copy of United States Letters Patent No. 967,618 issued August 16, 1910, to [670] Joseph Adelor Danis, for a metal horn, the same to be marked Plaintiff's Exhibit Danis Patent No. 967,618 of August 16th, 1910.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Danis Patent No. 967,618 of August 16th, 1910.")

Mr. MILLER.—Also a Patent Office copy of United States letters patent No. 921,676 issued May 18th, 1909, to Alfred R. Cunnius for a sound-augmenting horn, the same to be marked Plaintiff's Exhibit Cunnius Patent No. 921,676, of May 18th, 1909.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Cunnius Patent No. 921,676 of May 18th, 1909.")

Mr. MILLER.—Also a Patent Office copy of United States letters patent No. 917,404 issued April 6th, 1909, to George Benjamin and William Handley for a phonograph horn, the same to be

(Deposition of Baldwin Vale.)

marked Plaintiff's Exhibit Benjamin and Handley Patent No. 917,404 of April 6th, 1909.

Mr. ACKER.—The introduction of the document is objected to as incompetent, irrelevant and immaterial.

(The document is marked "Plaintiff's Exhibit Benjamin and Handley Patent No. 917,404 of April 6th 1909.") [671]

State of California,

City and County of San Francisco,—ss.

I, the undersigned, Herbert A. Bennett, do hereby certify that on June 15th and June 17th, 1915, I was, ever since have been and am now a notary public in and for the city and county of San Francisco, State of California, duly appointed, commissioned and sworn under and by virtue of the laws of the State of California, and reside at the said city and county of San Francisco, State of California: That on June 17th, 1915, at the office of John H. Miller, Esq., in the Crocker Building at the city and county of San Francisco, State of California, the deposition of Baldwin Vale, to be used on behalf of plaintiff on final hearing in the above-entitled case, was duly and regularly taken before me; that the said witness prior to giving his deposition was duly cautioned and sworn to testify to the truth, the whole truth and nothing but the truth, and carefully examined; that the deposition of said witness was reduced to typewriting by me; that the signature of the witness to his said deposition was waived by counsel for both parties: that the foregoing transcript of 28

pages is a true and correct transcript of the said deposition and all proceedings had and taken in connection therewith; that at the taking of said deposition I was attended by John H. Miller, Esq., an attorney at Law, as counsel for plaintiff, who examined said witness on behalf of plaintiff, and by Nicholas A. Acker Esq., an attorney at law, representing Messrs. Fenton & Blount, counsel for defendant, who examined said witness on behalf of defendant; that the said witness was of sound [672] mind and of lawful age and testified as set forth in the foregoing transcript; that the notice hereunto annexed dated June 7th, 1915, and signed by Frederick S. Duncan, as solicitor for plaintiff and directed to Messrs. Fenton & Blount solicitors for defendant, and endorsed by said Fenton & Blount acknowledging receipt of copy June 7th, 1915, was and is the notice under which said deposition was taken; that the deposition was taken under the provisions of Sections 863, 864 and 865 of the Revised Statutes of the United States; the reason for taking the said deposition at the time and place aforesaid was that the said witness at the time of taking said deposition lived and does live more than one hundred miles from the place of trial of the cause and more than one hundred miles from any place at which a District Court of the United States for the District of New Jersey is appointed to be held by law; that at said time said witness lived and does now reside in the State of California which is more than one hundred miles from the place of trial of said cause and more than one hundred miles from

any place at which a District Court of the United States for the District of New Jersey is appointed to be held by law; that during the taking of said deposition the various exhibits mentioned in the foregoing transcript were duly and regularly offered in evidence by the plaintiff's counsel and were by me duly and regularly marked in evidence as therein appears, and by stipulation of counsel for the respective parties the same are to remain in the possession of counsel offering them, to be produced by said counsel at the final hearing of the case; that the said deposition is herewith sealed up by me and [673] directed to the clerk of the District Court for the District of New Jersey at Trenton, New Jersey.

IN WITNESS WHEREOF I hereunto set my hand and official seal at the city and county of San Francisco, in the State of California, this 25th day of June, 1915.

[Seal] HERBERT A. BENNETT,
Notary Public in and for the City and County of San
Francisco, State of California.

[Endorsed]: Filed Feb. 1, 1916. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk. [674]

(Title of Court and Cause.)

[Testimony on Behalf of Complainant.]

Testimony on behalf of the complainant, taken pursuant to notice under the Statutes of the United States, in such cases made and provided, on the 10th day of August, 1914, at 10:30 A. M., before Charles

Drapkin, Esq., Special Examiner, by consent of the parties, at the office of Messrs. Hunter, Anderson & Barr, No. 1001 Chestnut Street, Philadelphia, Pa.

Present: JOHN H. HILLIARD, Esq., of Counsel for Complainant.

GEORGE E. CRUSE, Esq., of Counsel for Defendants.

IT IS HEREBY CONSENTED AND AGREED by the respective parties that the testimony to be taken herein in Philadelphia may be taken stenographically and transcribed from the stenographic minutes.

The parties hereto hereby consent that Charles Drapkin set as Special Examiner herein.

[Deposition of David T. McNeil, for Complainant.]

DAVID T. McNEIL, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

Q. 1. Please state your name, age, residence and occupation.

A. David T. McNeil; 45 years old; address, 62 Manheim Street, Germantown, Philadelphia, Pa.; my occupation is painter.

Q. 2. Do you know, or did you ever know, the firm of Hawthorne & Sheble? A. Yes, sir.

Q. 3. What was the business of Hawthorne & Sheble?

A. Why, making horns when I was there, making graphophone horns.

(Deposition of David T. McNeil.)

Q. 4. Did you work for them? A. I did.

Q. 5. When did you go to work for them, and how long did you [675] continue in their employ?

A. I went there either the latter end of 1904 or the early part of 1905, and I worked there until January of 1906.

Q. 6. What were your duties at Hawthorne & Sheble's when you first went there?

A. I went to work for a man named Bob Ford, and he did the work on the flower horns. Later I had charge of that department when they started to make the other horns, different kinds of horns. The first horns they were making was a sectional horn, when I went there covered with silk on the outside, and then when I got charge of the department they started to make the same kind of a horn and dipped it in lacquer and decorated it on the inside. That is what I had charge of.

Q. 7. Was that the only method that was used to paint or color the horns while you were there?

A. That is the lacquer and the painting, and they also made brass horns which they polished, and I think they made some aluminum horns, and I think they nickle-plated some horns.

Q. 8. Did you ever have any conference with Mr. Hawthorne relative to the method to be used in painting horns?

A. Why, I think I did, with Mr. Sheble and Mr. George; they brought a horn in one time to show me how it was decorated. We had trouble in packing our horns; the varnish would stick to the paper.

(Deposition of David T. McNeil.)

They brought a horn in and showed me one time how it was decorated, and it was smooth. It appeared to be burned in, and I think I asked them if they knew what it was about. I don't know the name of it, and the only information they gave me was that it was burned in the horn.

Q. 9. Do you know whether that was a horn manufactured by Hawthorne & Sheble?

A. No, sir, it was not one of their horns.

Q. 10. Do you know who manufactured it?

A. No, sir, I do not. [676]

Q. 11. When was this conference that you have spoken of, with reference to the time that you first went to work for Hawthorne & Sheble, that is, about how long after?

A. After that? Well, I should judge it was—I guess it was six months after that, all of six months.

Q. 12. How many men were working in the painting department when you first went there?

A. There were only two men; I worked for myself.

Q. 13. How many men were working in the painting department when you left?

A. Well, I had as high as fifteen or eighteen men under me—that is, painting and striping, dipping horns and putting sections on the horns.

Q. 14. How soon after you went in the employ of Hawthorne & Sheble did they begin to increase their painting force?

A. I judge it was shortly after about Ford left, and we did not work, I suppose, about a month—what was that question?

(Deposition of David T. McNeil.)

Q. 15. (Question repeated by stenographer.) How soon after you went in the employ of Hawthorne & Sheble did they begin to increase their painting force?

A. About a month. That was after Ford left. I worked for Ford about six weeks. Then I went with another man that came in on the horns; then about, I will say a month after that, I took charge and we started to make the smaller horns, and I took charge of the whole business then. That would make it three months after I went there first that I took charge.

Q. 16. Now, after that how rapidly did Hawthorne & Sheble increase their painting force?

A. How rapidly? You mean how quick was it done?

Q. 17. Yes.

A. When they first started we had a couple of extra men to dip the horns, etc., then they were making their horns I don't know whether by hand or by machinery, but later on, I suppose maybe in the course of a month or so they got a grooving machine that [677] they made the leaves that previous to that they were making by hand. I am not positive how they made them previously, but they got a grooving machine, and got them out more rapidly. After they started making this small horn, in a month to six weeks we were turning them out very fast.

Direct examination closed.

No cross-examination.

Deposition closed.

[Deposition of George Kuenstle, for Complainant.]

GEORGE KUENSTLE, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

By Mr. CRUSE.—All objections to the deposition of this witness are reserved. No notice of the taking of this deposition has been given.

Q. 1. What is your name and age?

A. My name is George Kuenstle; my age is 49.

Q. 2. And what is your residence and occupation?

A. My residence is 6308 Argyle Street, Philadelphia.

Q. 3. Did you ever work for the firm of Hawthorne & Sheble, in Philadelphia? A. Yes, sir.

Q. 4. When did you go to work for Hawthorne & Sheble?

A. In 1898 or 1899, one of those two years, I am not quite sure. I was there twice; I was there first a week, and there was first another man who did not like me and I was laid off after I was there a week. Later on I was there, and I was there until Hawthorne & Sheble went up the spout.

Q. 5. When did Hawthorne & Sheble go up the spout?

A. No, I can't tell you the year exactly. It was the last pay-day [678] we had and everybody was paid off and laid off. I remember when it was; it was the second trolley strike we had, on the 30th of May. I couldn't find the year, but I have got it somewhere. I don't know whether it was 1908 or 1909;

(Deposition of George Kuenstle.)

1908 I think it was, That Saturday was the last day the people was paid off and they had to get out.

Q. 6. What was the business of Hawthorne & Sheble when you first went to work for them?

A. When I first went to work for them it was carrying cases for records, making horns, also making carrying-cases for horns, a lot of different things, odds and ends, a lot of things.

Q. 7. What was Hawthorne & Sheble's business?

A. The time I came there it was nothing but horns, brass bell horns, what I call brass bell horns. We made tin horns, and so forth, but mostly brass horns.

Q. 8. Do you know what is meant by the term, "flower horn"?

A. Yes, I ought to know it.

Q. 9. What is a flower horn?

A. A flower horn represents a horn like a morning-glory. In the beginning, we called it morning-glory horn, then we called it flower horns. In the beginning, the time we started in, we called it morning-glory horns, because I remember the time we started in I brought some morning-glory blossoms from the house and showed the painters and stainers how to mix the paint and get it in natural shape.

Q. 10. Can you state when Hawthorne & Sheble first commenced to make morning-glory horns?

A. Well, that was—I couldn't tell you exactly the date; it was around 1904 or 1905, around that time; I couldn't tell you exactly the month, but it was 1904 or 1905, around that time.

Q. 11. Can you state how morning-glory horns were

(Deposition of George Kuenstle.)

constructed; that is, how were they made and put together?

A. Yes, I know a little bit of it. [679]

Q. 12. Will you do so?

A. It was made in the beginning by hand. A tin-smith was there and he had to make his pattern from another horn and he had to stay on the bench and cut it off with the scissors. It was done about six months, maybe eight months, maybe five months; I don't know how long he had to cut them, but I know he was disgusted with it, staying all day and cutting.

Q. 13. What was the name of the man who cut them out?

A. Well, I think it was the name of Charley Scheerer.

Q. 14. Can't you tell a little more definitely just how the parts of the flower horn or morning-glory horn were shaped and how they were joined together?

A. (Witness producing horn.) The first we made is what we call "scalloped," like this. (Witness refers to horn designated "Complainant's Exhibit for Identification Kuenstle Horn.") This is what we call scalloped. First we make this way, then it did not look right; then later on we made it more round. That is on the first one. Then while grooving and putting it together—we had a little grooving machine there the same as for other horns, but it did not work right on account of the shape, because the leaves had to be formed a little bit first and by the time it was shaved through the groover it lost the shape of it.

(Deposition of George Kuenstle.)

Q. 14. How many leaves, as you call them, were used by Hawthorne & Sheble in constructing their morning-glory horns when they first began to manufacture them?

A. The small ones I think was nine—eleven. That is a thing I ain't sure about. Such things I forgot. Let me see—fifteen—I couldn't tell you exactly the number of it. I know we had a great time to get them together in the beginning. I cannot tell you exactly the number of them. Maybe by this afternoon I will know all about it if I think of it.

Q. 15. Did you have a pattern or model from which to make [680] the morning-glory horns at Hawthorne & Sheble?

A. To tell you the truth, I remember very well Mr. Hawthorne coming chasing into the shop one day with a horn and he went up stairs, and I think it was in the forenoon, and dinner time Charley Scheerer and a couple of other fellows and I stuck our noses together, and one of the men said, "I wonder where he got that from." And I said to Charley Scheerer, "What have you got to do with it"? "Well," he says, "Damn it, I got to make a pattern off this damn thing. I can't get this thing apart." He was very excitable; he was German, like me, very excitable. He says, "Damn it, I got to take a pattern off this damn thing here and I can't take none off; I got to take it apart." So I guess Charley Wackes, the foreman, or I think it was Mr. Hawthorne, told him to take it apart. Then it was easy to make a paper pattern. The paper was on a piece of sheet iron and

(Deposition of George Kuenstle.)

then they had the pattern and then they started to cut.

Q. 16. When was it that Mr. Hawthorne came in with this horn as you have just told us?

A. When it was? I don't know exactly, I think it was 1903 or 1904, something like that, around that time; yes, 1903 or 1904, around that time. I don't know exactly the date and the month, but I think it was between 1903 and 1904, because we did not make any flower horns or anything like that for a good while.

Q. 17. Did Charley Scheerer succeed in making a pattern? A. Yes.

Q. 18. And what happened after that?

A. After that we started to make horns. Then Mr. Hawthorne came to me and said, "Kuenstle, if you be able to silk-finish them horns, why we make plenty money, plenty work and plenty money." I said, "All right, I will try my best and try hard for it." I started in and after a few months I had it going fine. In the beginning I had a little trouble with silk-finish. I [681] had it going find after a couple of months.

Q. 19. How long did Hawthorne & Sheble continue to cut them out by hand?

A. Well, it was only a few months, only a few months after Charley Scheerer—

Q. 20. Can you tell us about how many months?

A. I should judge about—I couldn't tell you exactly, but I think it was about five months, five or six months, something like that, maybe seven months,

(Deposition of George Kuenstle.)

but it is not less than five months,

Q. 21. What happened after that?

A. Then the leaves was punched out in the punch press.

Q. 22. You mean by a die?

A. Yes.

Q. 23. When Hawthorne & Sheble first began to make morning-glory horns as you have just told us about, what did they make them out of?

A. Dull tin, what I call bright tin, brass, and also the brass be nickle-plated; that means after they are nickle-plated flower horns.

Q. 24. Did they make them out of any other metal after that? A. No.

Q. 25. Did they ever make them out of steel?

A. No, they tried to but it did not work right and they gave it up; there were only about five or six, and it did not work right.

Q. 25. Do you know anything about where this horn (referring to Complainant's Exhibit Kuenstle Horn) came from?

A. This one is from Hawthorne & Sheble.

Q. 26. When was that made?

A. That is a horn that I experimented with to silk-cover it.

Q. 27. Do you remember when that horn was made?
[682]

A. That was one of the first lot, what I call the first lot of two or three hundred.

Q. 28. Where did you get it?

A. I got permission from the superintendent. I

(Deposition of George Kuenstle.)

told him I would take it home to experiment with it to get my silk-finish good.

Q. 29. Where has it been since you took it home?

A. In my attic.

Q. 30. All the time?

A. Yes; I did not know I had it.

Q. 31. When did you take it out of your attic?

A. I took it out of my attic yesterday.

Q. 32. When I was there to see you?

A. Yes, sir. It was *up the* attic quite a number of years; in fact, I did not know I had it any more; it was no good to me.

Q. 33. Was this horn (referring to Complainant's Exhibit Kuenstle Horn) made before or after Hawthorne & Sheble tried to make steel horns?

A. Oh, it was made before. The steel horns did not work; we couldn't get them together here (indicating); the grooves broke; as soon as you put them in the groover and tried to put them together they got loose, they couldn't work.

Mr. HILLIARD.—I offer the horn in evidence.

Same received in evidence and marked, "Kuenstle Exhibit Silk-covered Horn."

Q. 34. You have spoken about Mr. Hawthorne coming to Mr. Scheerer with a horn from which Mr. Scheerer was told to make a pattern?

A. Yes, sir.

Q. 35. Was that horn that Mr. Hawthorne brought made in the factory of Hawthorne & Sheble?

A. No, sir. He brought it from outside. From where I do not [683] know. Perhaps we will be

(Deposition of George Kuenstle.)

able to imagine it, where he brought it from, from New York or somewhere.

By Mr. CRUSE.—All of the foregoing answer, with the exception of the first sentence, is objected to as being hearsay, therefore incompetent and immaterial.

Q. 36. Before Mr. Hawthorne brought to Mr. Scheerer the horn that you have told about had Hawthorne & Sheble ever made a morning-glory horn in their factory while you were there?

A. No, sir.

Q. 37. While you were three, and before Mr. Hawthorne brought this horn to Mr. Scheerer, had Hawthorne & Sheble ever made a horn of aluminum, composed of sections or panels running the whole length of the horn and joined together with tinsmith seams?

A. Not that I know of.

Q. 38. What kind of horns were Hawthorne & Sheble making when you first went into their employ?

A. Why, they made brass, what I call brass bell horns, with steel body; the bell is brass, the body is steel; sometimes the whole horn is made out of brass; sometimes the horn is made—the bell is aluminum and the body steel, or the whole horn is made of aluminum; that is all the horns we made while I was there in the beginning, the time I first went there.

Q. 39. Did Hawthorne & Sheble at any time make what are known as “B” and “G” horns?

A. You got me guessing now.

Q. 40. Do you know what the “B. and G.” horn is?

A. Maybe I know, but I don’t know anything by

(Deposition of George Kuenstle.)
the name "B. and G."

Q. 41. Did you ever hear the term used, "B. and G."?

A. I heard the term used, but I cannot place it.

Q. 42. Before Hawthorne & Sheble began to make the morning-glory horns that you have told about, did they ever make a horn which [684] curved continuously from one end to the other?

A. No, not that I know of; I never saw one in the factory while I was there.

Q. 43. Do you remember their making what they call "full spun horns" out of brass?

A. No, because I think it couldn't be made full spun out of brass all one piece. All I know what was made while I was there, the bell was separate and the body was separate, and after they was formed, the body was formed and the bell was formed, they were spun together; that means the seam on the end of the bell toward the body was a seam here (referring to the edge of the large open end of the horn in evidence). The body had the seam open; the bell had the seam open; and the spinner put the bell in his chuck and the body in his mantle and put them together, closed up so that they come nice and smooth together. The spinner he had his—I forget now what you call it—he got his tools going around the bell and the body spinning around perhaps I should say fifteen hundred to two thousand revolutions a minute, and the spinner he put his tool on it and got them together, the two grooves, and you might as well say it is everything one piece, but it is never

(Deposition of George Kuenstle.)

done one piece, never.

Q. 44. Out of how many pieces were the bodies of these brass horns that you have just been telling us about made, the all-brass horns?

A. They were made one piece; the body is one piece.

Q. 45. You mean one piece of sheet metal?

A. One piece of brass; also the sheet-iron is one piece; if we ain't got enough sheet-iron we use two, but it looks bad; a dealer won't accept that.

Q. 46. Were all sizes of the brass horns made in the same way?

A. You refer to the brass bell horns, don't you?
[685]

Q. 47. The horns composed wholly of brass, the body and the bell?

A. All the same way.

Q. 47. Now, taking these horns composed wholly of brass, how were the edges of the body portion joined together?

A. The body joined together? We had a groover which was 72 inches long for the biggest horn.

Q. 48. That was used for the all-brass horns.

A. That was used for all the horns, all body horns, all brass bell, all of them.

Direct examination closed.

Cross-examination by Mr. CRUSE.

XQ. 49. What is your present occupation?

A. I am working on electric switch-boards.

XQ. 50. When did you first go with Hawthorne & Sheble?

(Deposition of George Kuenstle.)

A. It was about 1898 or 1899, around that time.

XQ. 51. What did you do when you first went there?

A. I made carrying-cases for talking machines, also carrying-cases for records.

XQ. 52. Were these of metal or of wood?

A. Wood boxes with leather, felt, canvas, or any old thing.

XQ. 53. Who did the covering of these boxes or cases?

A. It was me, and later on we got business and got help.

XQ. 54. In other words, you did carpenter work?

A. What was that?

XQ. 55. In other words, you did carpenter work, is that it? A. I covered them.

XQ. 56. As I understand it, when you first went there you made wooden boxes?

A. We did not make wooden boxes; wooden boxes was made outside and we covered them, made fancy boxes out of them.

XQ. 57. What did you do with the wooden boxes that were made [686] outside?

A. I covered them, put the blocks in there so they fit the talking machines, lined them out, put locks, catches, handles and corners on.

XQ. 58. When you first went there did you go as a carpenter? A. No, sir.

XQ. 59. What did you go as?

A. I went as a bookbinder; that is my trade what I learned in the old country.

(Deposition of George Kuenstle.)

XQ. 60. What did you do after you put the covers on the boxes?

A. Well, then I put my hands on different things, and I grew up and had charge of a few men. The next thing was—

XQ. 61. All the time you were with Hawthorne & Sheble your principal work was putting covers on and finishing? A. Finishing, yes, sir.

XQ. 62. Did you ever have anything to do with the manufacture of any horns which they sold other than to put the covers on?

A. I had no charge of it, but once in a while I had to go to the foreman of the tinsmith-shop and tell him what I want, how it is to be done, which way, what size and what number, for one number, 15 or 20 too many, and another number I have 100 too short.

XQ. 63. You never made or had anything to do with the making of the metal horns?

A. No, sir.

XQ. 64. Did you continue that work with Hawthorne & Sheble as long as you remained with them?

A. Yes, sir, I was there to the last minute; in fact, when the rest were gone I was called back to finish some work.

XQ. 65. When did you get the horn that you produced this morning?

A. When I got that?

XQ. 66. Yes, when did you get it?

A. Let me think—that was 1904, around that time, 1904—1905—1904, I think it was. [687]

XQ. 67. What part of 1904?

(Deposition of George Kuenstle.)

A. Well, I should say it was the fall—around Christmas time.

XQ. 68. How do you fix the date of 1904?

A. How do you mean the date?

XQ. 69. How do you know it was 1904?

A. Well, because in 1898 and 1899 I started in, and I was there almost four years before I was moved over to Howard and Jefferson. Well, the orders came in by the hundreds for carrying cases way out from Chicago. We got very busy that time; I had almost forty hands under me with carrying cases. This kept up almost a year and a half, and all of a sudden the bottom dropped out of that carrying-case business; I don't know how it happened all of a sudden, but the bottom dropped out and it wouldn't go. Some of the hands I had to lay off.

XQ. 70. A year and a half from 1902 would make it in 1903.

A. I couldn't tell you exactly the year; I think it was in 1904, if I ain't mistaken.

XQ. 71. Well, you are not sure whether it was 1903 or 1904, are you?

A. I couldn't positive say which year, but I would rather say it was 1904.

XQ. 72. Why would you rather say it was in 1904?

A. Because the time I was there until I left Hawthorne & Sheble, and had to leave them, and until the time my boy went down the shop with me—that is the reason I had rather say 1904, because he came there; I took him with me and tried to break him in in the carrying cases for the trimmings, and I had

(Deposition of George Kuenstle.)

him there a little while when the bottom dropped out of the carrying case business.

XQ. 73. But you are really guessing at the date, aren't you?

A. I say I couldn't positively swear to what months.

XQ. 74. You couldn't swear to what year it was?

A. As I said before, I would rather say 1904 than 1903.

XQ. 75. That is to say, it might be 1903? [688]

A. It might be, but I am in doubt of it. I would rather say 1904, because in my mind I think I would be more on the safe side if I say 1904 than if I say 1903.

XQ. 76. But it might have been 1903?

A. It might be.

XQ. 77. The horn that you produced this morning, was that made by hand? A. No, sir.

XQ. 78. Did you see any similar horns before that one at Hawthorne & Sheble's?

A. You mean similar horns? There were horns made there like this; there were two or three hundred in that lot.

XQ. 79. But before they made those two or three hundred they made a number by hand? A. Yes.

XQ. 80. And these that were made by hand were certainly made before the horn that you produced this morning? A. Yes.

XQ. 81. So that it is possible that there were horns like the one that you produced at Hawthorne & She-

(Deposition of George Kuenstle.)

ble the first part of 1904, although they were made by hand?

A. The first part of 1904, that might be.

XQ. 82. All of your testimony is based on recollection, is it not?

A. Yes. If I have enough time, I think about this thing. I have some stuff home, papers, books; if I go over them often enough, then it comes to me the same as yesterday, but you must know I have been away a good many years and I have a good many ups and downs since that time and I forget about this thing.

XQ. 83. When was this whole thing recalled to your mind? A. Why, yesterday.

XQ. Who did it?

A. This gentleman there (witness points to Mr. Hilliard).

XQ. 85. Mr. Hilliard? A. Yes, sir. [689].

XQ. 86. What did he say to you?

A. He asked me if I wanted to come down here to-day, if I would like to give testimony.

XQ. 87. Did he do anything to help you fix a date for those horns?

A. No, sir, when he started to talk I started to guess and think, and when my son was there he helped me a little, and naturally it came to me, but if I keep guessing and keep thinking for a couple of days then it will come to me.

XQ. 88. I understand you to say that from the time that you went to Hawthorne & Sheble that they never made any horns in sections other than the

(Deposition of George Kuenstle.)

type of horn which you produced this morning, is that right? A. Yes.

XQ. 89. How were the aluminum horns made?

A. The same as the brass bell horns.

XQ. 90. That is to say, they had a single piece?

A. The body was separate and the bell was separate; they were separate.

Cross-examination closed.

Redirect Examination by Mr. HILLIARD.

RDQ. 91. Did you have anything to do with silk-finishing any of the horns?

A. Yes, sir, that was my idea; I am sorry to say it, too. At that time I did not know what I know now.

RDQ. 92. Did you silk-finish any horns before you silk-finished the morning-glory horns?

A. Yes, sir.

RDQ. 93. What kind of horns?

A. Brass bell horns, with iron bodies.

RDQ. 94. Did you do that yourself?

A. Yes, sir.

RDQ. 95. Was it for that purpose that Hawthorne & Sheble needed a bookbinder?

A. Yes, there was nobody else able to do it.

RDQ. 96. You were employed for that purpose?

A. Yes, sir. [690]

RDQ. 97. You did other work besides cover cases, didn't you?

A. Yes, sir; and I did a good bit of other work; I was a jack of all trades by Hawthorne & Sheble; I was foreman and apprentice boy, carpenter, saw and hatchet boy, and every old thing I had to put

(Deposition of George Kuenstle.)

my hand to; I was willing to do it, too.

Redirect examination closed.

Recross-examination by Mr. CRUSE.

RXQ. 98. Notwithstanding all of these things, to wit, jack of all trades, you had nothing to do with the making of horns, either by machinery or by hand, is that right?

A. That is right. They had enough tinsmiths to do that. There was no use for me to tell them mechanics what to do.

RXQ. 99. They had a sufficient number of men to attend to that without any help from you?

A. Oh, yes.

RXQ. 100. Those men engaged in making the horns never had any orders from you *expect* to say what number of horns you wanted from them to cover?

A. Yes. I want to explain it to you a little. That tin horn here is dull tin; a dull tin horn is easy to be covered; bright tin it looks like frosted. Mr. Cramer, the superintendent at that time, he said to me, "Kuenstle, can't you make something like that?" I said, "Yes, I will try it." I went upstairs and made two little horns and brought them down to him and showed them to him, and he said, "That is good; how do you make it?" And I said, "I would like to keep it to myself." Well, I made thousands of them silk-finish, just made it like frosted glass. On this job you couldn't use that kind of thing; you had to use bright tin.

RXQ. 101. When did you first start to put the silk covers on horns?

(Deposition of George Kuenstle.)

A. In 1902, if I am not mistaken.

RXQ. 102. If you are not mistaken?

A. If I am not mistaken, 1902, or 1901—1902 on the brass bell [691] horns.

Recross examination closed.

Deposition closed.

By Mr. HILLIARD.—Complainant's counsel notifies defendant's counsel that he will take the testimony of Charles Scheerer, Eugene Domage, William Klein, Charles F. Gregory and Artimas Heller, beginning at 2 P. M. to-day, all of whom reside in the city of Philadelphia.

By Mr. CRUSE.—Counsel for defendant replies to this rather short notice.

IT IS AGREED by the parties hereto that signatures of all witnesses taken in this case in Philadelphia be waived unless otherwise notified before filing.

[Deposition of Carl Scheerer, for Complainant.]

CARL SCHEERER, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

Q. 1. What is your name and age?

A. My name is Carl Scheerer; my age is 43.

Q. 2. Where do you reside and what is your occupation?

A. 3366 North Mascher Street, Philadelphia; occupation, sheet metal worker

Q. 3. Did you know the firm of Hawthorne & Shible in Philadelphia at any time? A. Yes, sir.

(Deposition of Carl Scheerer.)

Q.4. Did you work for them?

A. I worked for them seven years, yes, sir.

Q. 5. When did you begin working for Hawthorne & Sheble?

A. I started to make up—all I do there was making horns for talking machines.

Q. 6. When did you go with them?

A. I went with Hawthorne & Sheble in 1902.

Q.7. And how long did you work for them after that?

A. I worked for them seven years, about seven years.

Q. 8. What were Hawthorne & Sheble manufacturing when you first went with them? [692]

A. We only made round horns and supplies for talking machines, but I only worked on round horns.

Q. 9. How many different kinds of round horns did they make?

A. We made them up from 14 inch up to 72 inch.

Q. 10. What kind of material did you make them of? A. Brass, aluminum and tin.

Q. 11. Do you know what is meant by the term "Morning-glory Horn"?

A. Yes, sir, we start them I believe it was in 1904, about two years after I start in.

Q. 12. Do you remember when in 1904?

A. I can't remember the month, you know; I can't remember the month and the date, but it was in 1904 when we start in.

Q. 13. Who made the first one?

A. I started to make the first one.

(Deposition of Carl Scheerer.)

Q. 14. What were your particular duties at Hawthorne & Sheble at that time, in 1904?

A. Why, you know, Mr. Heller was the superintendent and he brought the horn up to me. He asked me, "Can you make one like this?" I said, "Yes, sure I can."

Q. 15. Tell us what the horn was like, the one he brought to you.

A. I cannot tell you the truth on that case, because I don't know whether it was a nine-leaf horn or a ten-leaf horn.

Q. 16. Just what do you mean by a morning-glory horn? How was a morning-glory horn made and put together?

A. I took the pattern off that one we got in and then I cut them out by hand with a hand-shear and put them in together and soldered them.

Q. 17. What did you cut out by hand?

A. The leaves and the separate parts I cut out by hand, and then I shaped them up and soldered them.

Q. 18. Do you know where Mr. Heller got this horn he brought to you? [693]

A. All I know from the State of New York; as far as I know, from the State of New York.

By Mr. CRUSE.—Objected to as being secondary evidence and hearsay.

Q. 19. What was the shape of the leaves of this horn that Mr. Heller brought to you?

A. It was the same shape as this here (indicating horn on table).

Q. 20. Just describe it, tell us the shape.

(Deposition of Carl Scheerer.)

A. I cannot remember how wide it was on the bottom; I guess it was the top of phonograph machines.

Q. 21. What was the general shape of each leaf of this horn that Mr. Heller brought to you?

A. Do you mean the measurement, the width?

Q. 22. In what form was it? What was the outline of the leaf?

A. It was just a regular shape for flower horn. If you want to know the width and all that, I cannot give you no answer of that. I cannot remember the width that makes the shape in the horn, the width on the top and the bottom and the middle part. The middle point here and the top and the bottom, that makes the shape. I can't give you no answer about that, I don't know the shape correctly.

Q. 23. Were the leaves straight on the sides or were they curved? A. The leaves were bended.

Q. 24. What do you mean by "bended"?

A. Had a shape like that (drawing a curve on the table).

Q. 25. And how were they joined together?

A. We put a hollow bead in them with the machine, a hollow bead on one side; that was just for show, to make it look good.

Q. 26. And were they soldered?

A. Soldered together, yes.

Q. 27. Did the hollow bead have anything to do with holding them together [694]

A. It was just about a quarter of an inch, just like that (indicating); a hollow bead with a machine.

Q. 28. Was it a lock seam?

(Deposition of Carl Scheerer.)

A. No, only soldered together.

Q. 29. Were the edges locked together?

A. Not the first one.

Q. 30. That is the one Mr. Heller brought to you that you have been telling about? A. Yes, sir.

Q. 31. Did you make one like it?

A. Yes, sir; I made just the same as the sample was.

Q. 32. Tell us how you went to work to make one like it.

A. Well, I went to work and took a piece of paper and got a pattern off, you know; then when I had a paper pattern I went to work and marked the paper pattern on a sheet of tin; I put it on a sheet of tin, marked it off and cut it out.

Q. 33. After you cut it out what did you do?

A. I put the bead in, the hollow bead—and when I got the hollow bead I bended the same shape what the sample was.

Q. 34. Anybody else work with you in making horns in this method?

A. Yes, sir; them fellers they went back to the old country; it was only Segal—that feller he worked in there; Mr. Heller he did not work with—he was the superintendent. All them fellers they were German and Hungarian fellers. It was only four fellers when we start.

Q. 35. Where is Segal now?

A. I don't know. I can't tell you what he works now; he used to make them—he works in a chandelier place.

(Deposition of Carl Scheerer.)

Q. 36. Can he talk English?

A. Well, he ought to talk a little bit, because he is over here around sixteen years, I believe, fifteen anyway; he ought to talk the language. I have not seen Segal for over five years.

Q. 37. Now, how long did you continue making morning-glory horns by cutting them out by hand after you had started? [695]

A. We worked about—Oh, I believe we worked four or five weeks, maybe six weeks, five or six weeks anyhow.

Q. 38. What happened after that?

A. Why, they made a die to cut them out, cut them out by a die, you know, with the press, with the machine.

Q. 39. What effect did that have on the manufacture of them, the cutting them out of the die?

A. The die made in five minutes a couple of hundred, five or ten minutes; it takes awful long to cut them out by hand; it took a man a quarter of an hour for one horn to cut them out by hand.

Q. 40. Before Mr. Heller brought this horn to you that you have told about, did Hawthorne & Sheble ever make any morning-glory horns while you were there?

A. No, sir, I never saw any, not before, not in this place, no; that was the first one Heller brought up.

Q. 41. While you were there, and before the time when Heller brought this horn, did they ever make any phonograph horns composed of a number of strips running the whole length of the horn?

(Deposition of Carl Scheerer.)

A. No, sir, we only made the round horns before, only round horns with the brass bell in front.

Q. 42. How many seams were there in the round horns with the brass bell in front?

A. Only one. Then they made spun horns; that was the same, only they were brazed together. There was a man there does all kind of work on regular spun horns. They were brazed together and look like one piece altogether when they were finished; you couldn't see the seam then; just the same as a brass instrument what a fellow has got to make music, like a music band.

Q. 43. How many parts, or how many sheets of metal were those made up from? [696]

To make up one horn, one of those big ones?

Q. 44. Yes.

A. They was 56 inches high, those big brass horns, and they made some 36 inches long and some 30 inches long. The 56-inch horn, why, that was a roll of brass, so many feet in one roll; I cannot tell you how many feet I had in one roll; I believe it must have been over 50 feet, 60 to 70 feet in one roll; they had different widths in brass, 24 inch, 14 inch, then they got 36 inch; I guess that was about the widest they had, 36 inch, but you get a good many out of a roll of brass—the 56-inch horn.

Q. 45. How many seams would there be in a 56-inch brass horn?

A. There was only one seam in 56 inches; then they made 72-inch horns; that was two seams.

Q. 46. What was the purpose of having two seams

(Deposition of Carl Scheerer.)

in the 72-inch horn?

A. They couldn't get the brass big enough to make them out of one piece; they had to make them out of two pieces; the brass wasn't wide enough to cut them out of one piece.

Q. 47. Were those seams so that they couldn't be seen?

A. They were all like one piece; they were soldered together, soft solder; the 56-inch, they were brazed together.

Q. 48. The seams in those spun horns couldn't be seen?

A. They were all like one piece, they couldn't be seen.

Q. 49. How were the aluminum horns before Mr. Hawthorne brought this horn to you, that you have been telling us about?

A. They made them just the same as they made brass horns, they grooved them together.

Q. 50. How many seams were there in them?

A. Only one; they only made the small ones, aluminum, 30 inches down; they did not make them as big as the tin horns, the brass horns,—only the small ones. The most of the horns were out of brass and tin. Mr. Heller ought to know where that horn [697] comes from, that horn I made up, but I cannot tell you whether it was from the city of New York or where they got it from.

By Mr. CRUSE.—All of the last is objected to as being volunteered.

Q. 51. Did you know Charles McGowan?

(Deposition of Carl Scheerer.)

A. Yes, sir.

Q. 52. Did he work for Hawthorne & Sheble?

A. Yes, sir.

Q. 53. While you were there? A. Yes, sir.

Q. 54. What did he do?

A. He worked on round horns; he made round horns; then afterwards he worked on flower horns; when I quit the place, he took my place.

Q. 55. You mean after you quit Hawthorne & Sheble?

A. Yes, when I quit the job he took my place, Mr. Charley McGowan. I was away about four weeks, then I came back and worked on round horns.

Q. 56. You came back after that?

A. Yes, sir, about four weeks after. But I made up the first one.

Q. 57. Where was the factory of Hawthorne & Sheble when you first went to work for them?

A. When I first started in it was on Ridge Avenue; I cannot tell you the number.

Q. 58. Did they move after that?

A. I only worked there about four weeks and then they moved up Mascher and Oxford.

Q. 59. And how long did they stay there?

A. I worked there a couple of years; I cannot tell you how long I worked in that place; I must have worked in that place about three years, I believe.

Q. 60. And then where did they remove to?

A. They had a place at Howard and Jefferson. The time, you know, they had them two places, Mascher and Oxford and Howard and Jefferson;

(Deposition of Carl Scheerer.)

the Howard and Jefferson was the main place, the Mascher and Osford was only a branch place; they had them two [698] places that time, but where I make the horn, that was Oxford and Mascher, where I make the first flower horn that was Oxford and Mascher.

Q. 61. Do you know George Kuenstle?

A. Yes, sir, Kuenstle, yes, sir.

Q. 62. Was he at Hawthorne & Sheble's while you were there? A. Yes, sir.

Q. 63. What was his job?

A. He made carrying cases for the records, and such things. I guess his trade is pocketbook maker, something like that; he made the satchels, carrying cases, and things of that sort.

Q. 64. Did he do anything else?

A. They made their own machines, the talking machines.

Q. 65. Did George Kuenstle do anything beside making cases?

A. Well, he made the cases and then he made some of the horns out of kind of stuff—I forget the name—round horns what they use for hollering.

Q. 66. Megaphones?

A. Yes, sir, megaphones.

Q. 67. Did he have anything to do with putting silk covering on horns?

By Mr. CRUSE.—Objected to as leading.

A. Yes, he covered all the horns with silk.

Q. 68. What was his job there, was he a foreman?

A. Yes, sir, he was a foreman.

Direct examination closed.

(Deposition of Carl Scheerer.)

Cross-examination by Mr. CRUSE.

XQ. 69. What have you been doing since you left Hawthorne & Sheble?

A. I worked for Hale & Kilbourne.

XQ. 70. What do they make?

A. They make all the inside work for Pullman cars; then they make automobile bodies. [699]

XQ. 71. When did you go with them?

A. I go with them—I work there four and a half years—it was four years the second of February since I work there; that was in 1909, when I left Hawthorne & Sheble, and I was out of work a week, and then I start in for Hale & Kilbourne and I work there since.

XQ. 72. How do you manage to recollect things that happened in 1904?

A. Why, because I started in 1902, when I started in with Hawthorne & Sheble, and then I worked there around seven years; in 1904 I only worked there about two years, when we started the flower horns.

XQ. 73. I did not ask you that. I asked you how you recollect these things as happening in 1904.

A. That is the only time I can remember; when I worked there about two years we started to make flower horns.

XQ. 74. What part of the year in 1904 did they start on them?

A. How do you mean, in the fall or the spring?

XQ. 75. Yes.

A. I can't remember that, whether it was fall or

(Deposition of Carl Scheerer.)

spring; I only remember it was in 1904.

XQ. 76. Did you ever see a horn that was completed in Hawthorne & Sheble's factory of the morning-glory type, so that you could say what it looked like?

A. No, sir, I never saw one before I made up that one.

XQ. 77. I did not ask you that. I asked you did you ever see a horn after it was completed in the shops of the Hawthorne & Sheble company?

A. I saw some of them around the stores.

XQ. 78. Did you ever see a morning-glory horn?

A. Yes, sir.

XQ. 79. Do you know what it would look like?

By Mr. HILLIARD.—I object to what it would look like. [700]

A. Yes.

XQ. 80. What did it look like?

A. They all looked like the same to me as the one I made up; they called them all morning-glory horns at that time.

XQ. 81. Did you ever see a morning-glory horn with the silk covering on?

A. Yes, sir, I saw them after we made them up; I couldn't tell you the exact time.

XQ. 82. Does this look like the horn made by the Hawthorne & Sheble company in 1904 (exhibiting horn to witness)? A. Yes, sir.

XQ. 83. That horn looks like the one you first made?

A. Sure, that is the first we made; the sample I

(Deposition of Carl Scheerer.)

made up was the first one as this; that looks a little smaller than this, the first one I made; I cannot tell you how many leaves there were.

By Mr. HILLIARD.—Complainant's counsel notes that defendant's counsel has exhibited to the witness side of the horn from which the silk is removed.

By Mr. CRUSE.—Defendant's counsel states that the witness was first shown the silk side.

The WITNESS.—That was made about a year after that—oh, it must be a year, I guess, but I am not sure about that; I cannot tell you how long it was afterwards when they covered them, how long it took to cover them; they covered thousands and thousands; that was Kuenstle's work, he covered them with silk.

XQ. 84. Have you finished talking now?

A. Yes, sir.

XQ. 85. Did the first horn that you made up have the same seam? Did it have the same longitudinal seam as the horn which I now show you?

A. Yes, sir.

XQ. 86. It had exactly the same seam?

A. Exactly the same seam, yes, sir.

XQ. 87. What sort of a seam is this?

A. That is a lock seam; that is lapped together and grooved together; it is grooved together. (Witness examined horn in the light.) [701]

XQ. 88. Is it exactly the same seam that you first made?

A. No, sir, that ain't soldered together; that is

(Deposition of Carl Scheerer.)

slapped together, grooved together.

XQ. 89. What part of the year 1904 did you first make a morning-glory horn?

A. What part? You mean the month?

XQ. 90. Yes. A. I can't tell you the month.

XQ. 91. How do you know it was 1904?

A. Well, I know that for sure, because I start in 1902 and I work there two years, then we start in the flower horns.

XQ. 92. Why couldn't it be in 1903?

A. Well, because I worked—I asked a couple of fellows, and they said it was in 1904.

XQ. 93. Which fellows did you ask?

A. Charley McGowan and Charley Wackes.

XQ. 94. And that is the only way you know it was in 1904? A. Yes, sir.

XQ. 95. If it was left to your own recollection, you don't know when it was?

A. No, sir, I can't remember whether it was in 1905, but them two fellows says it was in 1904.

Cross-examination closed.

No redirect examination.

Deposition closed.

[Deposition of Eugene Damage, for Complainant.]

EUGENE DAMAGE, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

Q. 1. What is your name and age?

A. Eugene Damage; 42 years. [702]

Q. 2. And your residence and occupation?

(Deposition of Eugene Damage.)

A. 216 North 9th Street, Philadelphia; occupation, musical instrument maker.

Q. 3. Did you know the firm of Hawthorne & Sheble in Philadelphia? A. Yes, sir.

Q. 4. Did you work for them?

A. I worked for them, yes, sir.

Q. 5. When did you go to work for them?

A. I worked for them—I couldn't tell you exactly, but it might be about March or April, 1898.

Q. 6. What was their business at that time?

A. Well, they were making phonographs horns, made all kinds of accessories in that style of business.

Q. 7. What was your position with them?

A. My occupation?

Q. 8. What was your occupation with them when you first went there? A. As a horn maker.

Q. 9. Did you make the horns complete, or did you have only a part?

A. I make a specialty of the spun horn, what they call a full-spun horn.

Q. 10. How long did you continue in their employment?

A. I worked for them till February, 1902, but was off on different occasions; that is, between the day I start to work for them up to February, 1902, I think I left the place two or three times and worked a few months some other places. I did not work steady for the four years for them exactly, I was laid off a few months, a couple of times.

Q. 11. Where had you been working prior to going

(Deposition of Eugene Damage.)

with Hawthorne & Sheble?

A. Just at that time I work about a year for Mr. La Forrestier making what they call the spun bell there, and when I left him [703] I worked for Hawthorne & Sheble.

Q. 12. What was the business of La Forrestier?

A. Bell maker.

Q. 13. In Philadelphia? A. In Philadelphia.

Q. 14. Did they make any horns for Hawthorne & Sheble before you left them?

A. I think they did make some for them.

Q. 15. What kind of horns did they make for Hawthorne & Sheble? A. A full-size spun horn.

Q. 16. Were the sides of those horns straight or curved?

A. Straight, everything straight. This was the horn, made exactly same as the musical instrument bell. (Witness produced a catalogue entitled, "Hawthorne & Sheble, Offices and Salesroom, 602-604 Chestnut Street, Factory, 1025 Ridge Avenue, Philadelphia, Pa., U. S. A.")

Q. 17. Where did you get this catalogue?

A. When I was working in that place I guess somebody gave it to me.

Q. 18. Do you remember when this was issued?

A. This was issued on Ridge Avenue. That was in the beginning of their business when they were at Ridge Avenue.

By Mr. HILLIARD.—I ask that this catalogue be marked "Complainant's Exhibit for Identification, Damage Hawthorne & Sheble Catalogue."

(Deposition of Eugene Damage.)

Q. 19. Do you know where their place of business was when this was issued?

A. On Chestnut Street.

Q. 20. Where was their factory?

A. I think 1025 Ridge Avenue.

Q. 21. Do you remember when they moved from 1025 Ridge Avenue?

A. Well, I got laid off the time they moved, and that ought to be—I think they moved up-town in about 1901; I wouldn't [704] say for sure that is the date; I don't know exactly; you see, we worked on Ridge Avenue on the third floor, and they had half of the floor there; then they go up to the fifth floor after that, and from that they went uptown; but the dates I don't remember.

Q. 22. Does that catalogue show any of the kind of horns that La Forrestier made for Hawthorne & Sheble?

A. Yes; this here (Witness refers to page 34 of Complainant's Exhibit Damage Hawthorne & Sheble Catalogue); if they made anything else I don't know, I don't think so; I know they made some there, because they made them in the beginning of the phonograph business. Mr. La Forrestier made the full spun horns at the beginning of the phonograph business, and about that time Hawthorne & Sheble had just started to make this kind of horn (Witness refers to page 33 of the Complainant's Exhibit Damage Hawthorne & Sheble Catalogue); they were starting to make these. When I got acquainted with them, Hawthorne & Sheble were making these. I got there

(Deposition of Eugene Damage.)

as a spun horn maker to make that style (Witness refers to page 34 of the Complainant's Exhibit Damage Hawthorne & Sheble Catalogue).

Q. 23. Now, how were these horns on page 34 of the catalogue made; how were they constructed and built?

A. They were made the same thing as the musical instrument horn.

Q. 24. That doesn't mean anything to us.

A. I want to make it as clear as possible. Let me see how I could explain that. The spun brass horns were made from the plank of brass, turned and brazed together, and finished on the form, and spun on the form, so they were made like one solid piece of metal.

Q. 25. How many seams did they have in the body of the horn?

A. Depending on the size. Size 14 inch, on page 34 of Complainant's Exhibit for Identification Damage Hawthorne & [705] Sheble Catalogue, had only one, which extended longitudinally. From 18 inch to 42 inch was one seam, longitudinally, the same way, and a gusset on the large part of it, or a piece put in.

Q. 26. Can you draw a gusset on the catalogue there?

A. Yes, sir. (Witness draws upon page of Catalogue.) The 56 inch was made with a ring there.

Q. 27. Where was the ring?

A. Right there. (Witness marks the letter "A" at the location of the ring in the 56-inch horn on

(Deposition of Eugene Damage.)

page 34 of the catalogue.) The 56 inch was made firstly of a straight body with one seam longitudinally, and the bottom was made with two seams, the bell was made of two seams; that is, to get the material, we would get two planks and get them like that and have the seam here, and altogether joined together by the band where I have the letter "A" on page 34 of the catalogue. That seam has nothing to do with it. If we could have spun the horn in one piece, no seam would be necessary.

Q. 28. Why was it necessary in the spun horns to have two seams in the larger sizes?

A. Well, it was necessary for saving the material and working quicker.

Q. 29. Now, did La Forrestier, while you were with him, ever make any aluminum horns, tin horns or brass horns, composed of a number of longitudinal sections? By a number, I mean more than two.

A. No, sir, never saw him make any other horn than that the time I was with him.

Q. 30. Now, what kind of a horn did Hawthorne & Sheble make when you went with them, the same kind?

A. When I went with them they were making this brass horn, made of two pieces, shown on page 33 of the catalogue, and made of brass—all brass they were only making at that time. I [706] went with them to make a specialty of the full-spun brass horn shown on page 36 of the catalogue.

Q. 31. How did you make these horns on page 34 of the catalogue?

(Deposition of Eugene Damage.)

A. The shape of the first spun horns are made by hammering them to their shape and finishing up on a form or a mandril with a spinning tool.

Q. 32. Now, did any of the horns made by La Forrestier for Hawthorne & Sheble have longitudinal ribs or seams? A. Not that I know of.

Q. 33. When did you say you left Hawthorne & Sheble; was it in 1902?

A. I left them in February, 1902.

Q. 34. Now, before you left Hawthorne & Sheble, had Hawthorne & Sheble made any horns composed of more than two longitudinal sections joined together by seams?

A. If I remember well, they made some aluminum horns—some horns were made with two and three seams; that is, the top with sometimes one or two seams and one to join the top and the bell together. Here they had to have a seam.

Q. 35. You mean there would be a seam to fasten the bell and the body? A. Yes, sir.

Q. 36. And in some cases there would be two longitudinal seams in the body of the horn?

A. Yes, to save metal. I am speaking mostly of the aluminum horns.

Q. 37. What was the purpose of having two seams in the body of the horn?

A. To save the metal. Sometimes they did not have a wide enough piece of metal. There was always a seam to join the bell to the body. Zinc and tin were only made with one seam in the body and one to put together. That is all I ever saw there.

(Deposition of Eugene Damage.)

Q. 38. What sizes of horns required two seams?

A. I don't remember that exactly.

Q. 39. Was it the large or the small horns?

A. I suppose it would be on the large. On the 30-inch, what they call spun aluminum, horn, 30 inches long, they had a pretty large size horn there, and to get the width on the bottom of the body, the connection of the body and the bell requires such a wide metal that they made the body of two pieces.

Q. 40. Will you draw on this 56-inch horn, on page 34 of the catalogue, a sketch of the gusset that you have been telling about?

A. There is no gusset on that; only from 18 inches to 42 inches; 56 inches, as I explained before, has no gusset.

Q. 41. Will you draw on this 24-inch horn, on page 34 of the catalogue, a sketch of the gusset? Just draw it right on the horn.

A. (Witness does so, and marks it "B.") This gusset, of course, would not show when the horn was finished.

Q. 42. How many of those gussets were made in these spun-brass horns? A. Only one gusset.

Q. 43. Would there be only one gusset where there were two longitudinal seams in the body of the horn, or two gussets?

A. There is nothing necessary, nothing come to that.

Q. 44. Now, you have told about the brass horns. While you were with Hawthorne & Sheble did they make any horns of tin composed of more than two

(Deposition of Eugene Domage.)

longitudinal sections joined together with seams? Did they make any such horns of two or more sections running the whole length of the horn joined together by tinsmith seams?

A. No, only made one seam; all I saw there was made of one seam.

Q. 45. Do you know what the morning-glory horn is? [708]

A. No.

Q. 46. Do you know what a flower horn is?

A. Only from what I heard from the stores.

Q. 47. Did you see them in the stores?

A. I suppose that is what they call flower horn.

Q. 48. Do you know how they are constructed?

A. No.

Q. 49. Did Hawthorne & Sheble ever make any horn composed of sections running the whole length of the horn which curved on both edges, that is to say, curved inwardly on both edges?

A. Not up to the time I was there. They might make them very near after I left, but I never saw one made there.

Q. 50. Did Hawthorne & Sheble ever make, while you were there, a horn of any material the body of which was curved, I mean curved from end to end?

A. No.

Q. 51. Do you understand my question? I mean curved from end to end.

A. No, none.

Q. 52. While you were with Hawthorne & Sheble did they make any horn like the one which I show

(Deposition of Eugene Damage.)

you (exhibiting to witness Complainant's Exhibit Kuenstle Horn)? I call your attention merely to the construction of this horn whereby it is composed of nine longitudinal sections joined together by seams.

A. I never saw any made at that time.

Q. 53. Did Hawthorne & Sheble ever make, while you were there, any horns composed of more than two longitudinal sections joined together by ribs or seams?

A. They only made aluminum, made of two longitudinal seams, as far as I remember.

Q. 54. Have you any interest of any kind whatsoever in the outcome of this suit?

A. None at all.

Direct examination closed.

Cross-examination by Mr. CRUSE.

XQ. 55. I understand that you left the employ of Hawthorne & Sheble in 1902. Will you please tell me what part of the year [709] 1902?

A. February.

XQ. 56. Were you at all familiar with what went on in the shops or factories of this concern after you left? A. Not after I left, no, sir.

XQ. 57. Now, referring to the longitudinal seams which occurred in the tin and aluminum horns which you have described, how were the seams made?

A. I cannot give a real good answer on that, not having done that work myself; it was done by some tinsmith there, which was there especially for that kind of work, but I think they were doing that the same as the water-spout or stovepipe are made; that

(Deposition of Eugene Domage.)

is the same as those are made. I don't know what you call it, but it is the same way as they are making that.

XQ. 58. And all this occurred while you were in their employ from 1898 to 1902; I mean the making of the seams?

A. That is the only way they make the seam the time I work there. For a time they did not make the horn—let me see—everything was soldered except the aluminum, of course. All their brass horns, which they made of tin body, brass bell, sometimes all brass, that is, the body and bell of brass, were soldered. I think they did make the silveroid horn the same way too. I am not sure about that, but I think they did solder them together.

XQ. 59. While you were in the employ of Hawthorne & Sheble did you ever see any glass horns?

A. No, sir. Of course, it could have been done in the tinsmith shop, but I never saw them in the shop; the glass horn could have been in the office, but I never saw it in the shop. The office was on the third floor, the shop on the second.

Cross-examination closed. [710]

Redirect Examination by Mr. HILLIARD.

RDQ. 60. Did Hawthorne & Sheble have any means of making glass horns?

A. Not that I know of; no, they have no means to make them. After they extend they took two or three places around the neighborhood; then I do not know what they done. When I work there they had

(Deposition of Eugene Damage.)

only that place, and they had nothing there to make the glass horns.

RDQ. 61. Who was the tinsmith that you have spoken about?

A. I can give you no names. I can give no names, but if you had seen me about a month ago, I got a hold of a fellow there who work after me, and he knew them. That man called to me and asked me for work.

RDQ. 62. Did he come in reference to this case?

A. No, nothing at all, he was looking for a job. He could have got some name of the tinsmith. If you get a hold of Mr. Heller he could give you the name of one or two, because he was the man that knew everybody. I know one under the name of Charley, that is all.

Redirect examination closed.

Deposition closed.

Philadelphia, Pa., August 11, 1904.

Met pursuant to adjournment.

Appearances: (Same as before.)

[Deposition of Henry J. Mayer, for Complainant.]

HENRY J. MAYER, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

Q. 1. What is your name and age? [711]

A. Henry J. Mayer; age, going on 29.

Q. 2. And your residence and occupation?

A. Residence, 2548 Sepviva Street, Philadelphia;

(Deposition of Henry J. Mayer.)

occupation, metal spinner.

Q. 3. And you are with Horne & Brannan?

A. Yes, sir.

Q. 4. Did you know the firm of Hawthorne & Sheble? A. Yes, sir.

Q. 5. Did you work for them?

A. Four years.

Q. 6. When did you go to work for them?

A. I judge about the year of 1899, the month of August.

Q. 7. What was their business?

A. When I first went to work for them they manufactured horns for phonographs and phonograph supplies.

Q. 8. What kind of horns were Hawthorne & Sheble manufacturing when you went with them?

A. When I first went to work with them they manufactured brass, zinc—they call that silveroid—and aluminum horns. They made some tin horns too.

Q. 9. Will you describe how the aluminum horns were made.

A. The aluminum horns had a spun bell, and the body was one piece lapped together.

Q. 10. How was it lapped together?

A. Why, it was lapped together just like a groove, set in to one another, two laps.

Q. 11. Was it a tinsmith lock seam?

A. Yes, that is what you would call it.

Q. 12. Is what you have said true of the aluminum horns all the time you were there?

(Deposition of Henry J. Mayer.)

A. Yes, all the time I was there.

Q. 13. Did Hawthorne & Sheble at any time while you were there make aluminum horns composed of two or more longitudinal sections running the entire length of the horn? [712]

A. Two sections?

Q. 14. Two plates or panels.

A. I guess they did. The only way they did that is when they couldn't get the metal wide enough they would make the body half—that is, lapped together by a tinsmith's lock seam.

Q. 15. You mean they would be lapped together longitudinally the length of the horn?

A. Yes, the length of the horn; the bell would be lapped to the body too; the spinner would do that by a roller.

Q. 16. How many of these strips or sections were used in the cases that you have just told about?

A. Not over two.

Q. 17. Did Hawthorne & Sheble, while you were there, ever make any aluminum horns which tapered in curved lines from one end to the other?

A. No, sir—wait a minute on that—tapered and curved lines?

Q. 18. I am speaking only of the body of the horn.

A. That tapers.

Q. 19. But did it taper in curved lines?

A. No, it did not.

Q. 20. How about the tin horns?

A. They were mostly made just a straight taper.

Q. 21. Were they made in more than one section,

(Deposition of Henry J. Mayer.)

the body of the tin horns?

A. Two sections at times, according to size.

Q. 22. That was in the larger horns?

A. Yes, sir.

Q. 23. Did they ever make any tin horns, while you were there, that tapered in curved lines; that is to say, the body of the horn? A. No.

Q. 24. How were the brass horns made?

A. They were made in two pieces; let me see, they were put together—the body was put together with a tinsmith [713] lock seam, and the bell and the body were rolled together by spinner.

Q. 25. Were they ever made any more than two pieces? A. No.

Q. 26. What size horns were made in two pieces?

A. Why, anywheres from 14 up to 52 inches.

Q. 27. Do you know what is meant by the term, "Morning-Glory Horn"? A. No, I do not.

Q. 28. Do you know what is meant by the term, "Flower Horn"?

A. That thing—I was out of there before they started to make those things.

Q. 29. Do you know, aside from what they made, what is generally known by the term of flower horn or morning-glory horn? A. Yes, sir.

Q. 30. Do you know how they are constructed?

A. No, I do not.

Q. 31. You know their shape? A. Yes.

Q. 32. Do you know whether or not they are constructed with more than one sheet of metal?

A. Sure, there is more than one sheet of metal; I

(Deposition of Henry J. Mayer.)

couldn't tell you how many, though.

Q. 33. Do you know how the strips of metal in the flower horn are joined together?

A. No, I do not, they came after my time in the factory; I was out of there before that.

Q. 34. I am speaking of flower horns generally?

A. I never examined them thoroughly to find out, because I got out of the horn business and went right in the chandelier business when I got out of there.

Q. 35. Did Hawthorne & Sheble, while you were there, ever make any horns of the shape of the flower horn and morning glory horn? A. No, sir. [714]

Q. 36. While you were at Hawthorne & Sheble's, did they ever make a horn similar to this one which I show you (exhibiting to witness Complainant's Exhibit Kuenstle Horn)? A. No, sir.

Q. 37. I refer now to the feature of this horn in which it is composed of a number of longitudinal sections and fastened together with seams.

A. Nothing like that was ever made there in my time.

Q. 38. Was any horn ever made there in your time that had more than two ribs or seams running the length of the body? A. No.

Direct examination closed.

Cross-examination by Mr. CRUSE.

XQ. 39. Will you look at the Complainant's Exhibit Kuenstle Horn and tell me what seam is used to join the sections together?

A. No, I cannot; I haven't any experience in that

(Deposition of Henry J. Mayer.)

seam at all. I can't tell you what seam that is. It is similar to the tinsmith's lock seam, but the tinsmith's lock seam is flat. That is what they used to make there, it used to be flat, while this is half round.

Cross-examination closed.

Redirect Examination by Mr. HILLIARD.

RDQ. 40. Will you state a little more in detail what your job was in Hawthorne & Sheble's, what your duties were?

By Mr. CRUSE.—Objected to as not proper redirect examination.

A. I handled all the metal, worked with the tinsmiths, spinners, used to keep the stocks, all of the metal, aluminum, brass, zinc, or whatever came in there.

Redirect examination closed.

Recross-examination by Mr. CRUSE.

RXQ. 41. Did you actually do any work on the horns while you were with Hawthorne & Sheble's?

A. Yes, I used to work on the horns; I worked with the tinsmith's occasionally; most of the time I was on the spinning.

RXQ. 42. What did you do particularly?

A. Sometimes I used to help the tinsmith make this lock seam. I was only a boy of seventeen years when I left there. I used to do all the annealing and sometimes I would spin.

RXQ. 43. How did you happen to refresh your recollection as to what went on at Hawthorne & Sheble while you were there?

(Deposition of Charles Wackes.)

A. This man here came to see me this morning and asked me to come down here.

RXQ. 44. Which man do you mean? [715]

A. Mr. Hilliard; he asked me if I knew anything about them.

Recross-examination closed.

Deposition closed.

[Deposition of Charles Wackes, for Complainant.]

CHARLES WACKES, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

Q. 1. What is your name and age?

A. Charles Wackes; 52 years old.

Q. 2. And your residence and occupation?

A. 2800 Cambridge Street, Philadelphia; my occupation is milk dealer.

Q. 3. Did you know Hawthorne & Sheble, of Philadelphia, at any time?

A. Yes, sir, I did.

Q. 4. And did you work for them?

A. Yes, sir.

Q. 5. When did you go to work for them?

A. In 1900.

Q. 6. How long did you work for them?

A. About six years.

Q. 7. What was their business in 1900 when you went to work for them?

A. They made all kinds of phonograph supplies.

Q. 8. Will you state a little more definitely just exactly what they made.

(Deposition of Charles Wackes.)

A. They made brass horns, black iron horns, and also cases, record cases, record cabinets; they had regular cabinets up there on the third floor; I was in the tinsmith-shop.

Q. 9. Just what were your duties there when you first went to Hawthorne & Sheble?

A. What I do, we made those brass horns, spun brass horns, and then was brass horns, the bell was spun and the body was grooved [716] together; you know what the old style horn is.

Q. 10. You were a spinner, were you?

A. Yes, and I had charge of the tinsmith-shop besides.

Q. 11. How many departments were there in Hawthorne & Sheble's place?

A. There were about four or five.

Q. 12. What were they?

A. There was the case, what they made, those carrying cases; then they had a cabinet department; there was a spinning department; then there was a department where they made those stains for the horns; then there was a polishing department.

Q. 13. Did you work in the finishing department all of the time?

A. Yes, sir.

Q. 14. Did I understand you to say you worked in the tinsmith department?

A. Tinsmith and spinning department was one.

Q. 15. Can you name some of the other men who were there in your department while you were at Hawthorne & Sheble's?

(Deposition of Charles Wackes.)

A. Well, there was Charley Scheerer, he was in the tinsmith department; then there was Dave O'Connor, he was in the painting department; then there was Billy Klein, he was in the polishing department; and Dodt, he was in the machine department; and James Glathill, he was in the machine department.

Q. 16. Now, was Mr. Heller there?

A. Mr. Heller was there. Well, he was there the first time; he did not stay there all the time I was there.

Q. 17. Where was Hawthorne & Sheble located when you first went with them?

A. It was on Mascher and Oxford, was the factory, and the office was down here on Chestnut Street.

Q. 18. Were you there at any time they were on Ridge Street?

A. No, I wasn't there; I came there later.

Q. 19. Now, will you describe to us all the different kinds [717] of horns that Hawthorne & Sheble were making when you first went there?

A. Well, they make brass horns, then we make small aluminum horns, then we make tin horns, with brass bell on it, brass bell and tin body.

Q. 20. Any others?

A. Well, I made different kinds of horns. I made some big horns that they sent out to exhibitions at Chicago. We made many different shapes; we might only have made one or two of them; the most was the regular size horns that go with the phonographs.

Q. 21. Now, how were these horns that you have

(Deposition of Charles Wackes.)

just been telling about made and put together?

A. When I come there they were soldered together; the bell was spun and the body was made in one piece, soldered together, and afterward both of them was soldered together.

Q. 22. Did you make the body of all the horns in the same way? A. Most of them, yes.

Q. 23. Did you use the same number of pieces of sheets of metal in each horn?

A. Pretty nearly all the same way, one or two pieces in each body.

Q. 24. And those pieces were joined together how?

A. Were soldered together.

Q. 25. How did the seams run in the body?

A. The seams run the long way.

Q. 26. Do you know what is meant by a morning-glory or flower horn? A. Yes, sir.

Q. 27. Have you seen them? A. Yes, sir.

Q. 28. How much have you seen them?

A. I have seen a good many of them.

Q. 29. Did Hawthorne & Sheble at any time make flower horns? A. Yes, they did.

Q. 30. Do you remember when they began to make flower horns? [718]

A. About 1904.

Q. 31. You say about 1904. A. 1904.

Q. 32. Can you make it any more definitely?

A. Well, it might be in the fall or in the spring; I couldn't tell you exactly.

Q. 33. Do you remember how they happened to begin to make flower horns?

(Deposition of Charles Wackes.)

A. Mr. Hawthorne he brought a sample over from New York.

Q. 34. What did he do with the sample?

A. Well, we looked it over to see how it is made, then made out patterns after.

Q. 35. Did you look over it yourself?

A. Yes, sir.

Q. 36. Who else looked it over?

A. Charley Scheerer and the superintendent there, Heller, and there was a feller on the third floor, I can't remember the name now; he was superintendent afterwards, after Heller left.

Q. 37. Had Hawthorne & Sheble ever made a horn like the one that Mr. Hawthorne brought to you before that time?

A. No, sir, no, they did not make any horn.

Q. 38. What happened after he brought the horn to you and Mr. Heller and Mr. Scheerer?

A. He brought the horn up and we tried to make the horn.

Q. 39. How did you go about it to make the horn?

A. We took the measurement from the leaves that was in the horn and traced them over again, and Charley Scheerer, he was the tinsmith, he cut them out, and then we soldered them together.

Q. 40. Which horn did you solder?

A. The horn we made after the one that was brought.

Q. 41. How many horns did Charley Scherer make at first?

A. Well, at first we made one or two, so we could

(Deposition of Charles Wackes.)

put the right size [719] on it.

Q. 42. Then what happened?

A. Then afterwards we made them by the dozen or by the hundred, still soldering the leaves together; then afterwards we had dies made to punch the leaves out, and then had grooves made to groove them together instead of soldering.

Q. 43. How long after Charley Scherer made the first horn that you have told about did you get the die in the grooving machines?

A. Well, about three months afterwards.

Q. 44. How fast did you make them then, after you got the die in the grooving machine?

A. Then we make them by the thousands; we put them together by thousands.

Q. 45. Was this horn that Mr. Hawthorne brought made in Hawthorne & Sheble's place? A. No.

Q. 46. Before Mr. Hawthorne brought this horn to you, Heller and Scheerer, and while you were there in Hawthorne & Sheble's employ, did Hawthorne & Sheble, or anybody in their factory, make any kind of a horn with a body composed of more than two sections running its entire length?

By Mr. CRUSE.—Objected to as leading.

A. No, sir.

Q. 47. Did they make any aluminum horn of that kind?

A. No, but we made aluminum horns of two pieces; the body was made of two pieces and the bell put on the end of it.

Q. 48. Why did you make the body of two pieces?

(Deposition of Charles Wackes.)

A. We had to make it of two pieces; we couldn't get the stuff wide enough.

Q. 49. Did those aluminum horns that you have just told about have bells? [720]

A. Bells, spun bells on it.

Q. 50. How were the bells fastened to the body?

A. They were grooved on; I rolled them on.

Q. 51. How were the brass horns made?

A. The bell was soldered on the body when I come there; then after I worked there a while I grooved them on on the machine with a roller.

Q. 52. Were any of those brass horns composed of more than two sections running the length of the body?

A. Never more than two, the smaller size always one piece, and the wider size, because the stuff wasn't wide enough, we had to use two pieces.

Q. 53. How about the tin horns?

A. The same thing.

Q. 54. Did Hawthorne & Sheble make what they call full-spun horns? A. Yes, they did.

Q. 55. How were those made?

A. They were brazed together first and then hammered out afterwards; the bell was spun, the body brazed together and hammered out afterwards; then after that we spin it over.

Q. 56. Were the seams visible in those brass horns?

A. No, we couldn't tell the seams were visible only when it was tarnished; then you could see the marks from the brazing.

(Deposition of Charles Wackes.)

Q. 57. Were the bodies of those spun or full-spun horns ever made of more than two parts? A. No.

Q. 58. Why were they made of two parts?

A. The brass did not come wide enough to make it out of one.

Q. 59. Did you ever see any horn made in Hawthorne & Sheble's place like the one I show you on page 34 of Complainant's Exhibit for Identification Damage Hawthorne & Sheble Catalogue? I refer to the 42-inch horn on that page, which has a triangular portion of the bell marked out and indicated by the letter "B."

A. That is a full-spun horn; that is a piece brazed in there. [721]

Q. 60. Did they ever make any horns like that?

A. Yes; I put pieces in the bell when they hammered it out to get the width of the bell, otherwise they couldn't get it wide enough. You wouldn't notice it when they stand.

Q. 61. Did Hawthorne & Sheble ever make any brass horns that were fully spun, made wholly by spinning? A. No.

Q. 62. Would that be possible to do? A. No.

Q. 63. Did they ever make any aluminum horns that were fully spun? A. No, sir.

Q. 64. Would that be possible? A. No.

Q. 65. In your last two questions I am referring to spinning the body of the horn and the bell also.

A. No, sir.

Q. 66. Did Hawthorne & Sheble ever make glass horns?

(Deposition of Charles Wackes.)

A. They had some there; they did not make them, though. I don't know where they got them from.

Q. 67. Do you remember Eugene Damage?

A. Yes.

Q. 68. What did he do there?

A. He was brazer; he made the one-piece horn, what they call one-piece horn; he brazed them together and hammered them out.

Q. 69. In what department were parts of the horns cut out and put together?

A. Oh, in the tinsmith department.

Q. 70. That is where you were? A. Yes.

Q. 71. Did Hawthorne & Sheble make any horns, prior to the time when Mr. Hawthorne brought this flower horn to you and Heller and Scheerer, out of curved strips, strips curving from one end to the other of the horn? A. No.

Q. 72. Did they make any other than straight body horns?

A. Yes, we made some horns shaped like—they come up on the machine that way and bend over that way (indicating); the pieces would get in a different way, not in the round way.

Q. 73. Can you find any in this catalogue (exhibiting to witness [722] Complainant's Exhibit for Identification Damage Hawthorne & Sheble Catalogue)?

A. (Witness examines catalogue.) No, there is nothing in there. The seams run the round way instead of the long way; the seams ran around the horn instead of the long way. The pieces were set

(Deposition of Charles Wackes.)

together like an elbow on the stovepipe.

Q. 74. What were those horns called?

A. I don't know; I couldn't tell you; we didn't make many; just once in awhile we would get an order for it.

Q. 75. What was Heller's position with Hawthorne & Sheble? A. He was superintendent.

Direct examination closed.

Cross-examination by Mr. CRUSE.

XQ. 76. When did you leave Hawthorne & Sheble? A. In 1906.

XQ. 77. Why did you leave?

A. I went in business for myself.

XQ. 78. What sort of business?

A. Milk business.

XQ. 79. What part of 1906 did you leave?

A. May, I guess, May, 1906.

XQ. 80. During the whole time that you were working for Hawthorne & Sheble what position or job did you hold?

A. I was metal spinner, and besides had charge of the tinsmith department.

XQ. 81. What was Scheerer in that department?

A. He was the head tinsmith.

XQ. 82. But you were foreman?

A. I was foreman over the room; he was the head tinsmith on account I was no tinsmith; I was a spinner; and Charley [723] Scheerer he couldn't speak much English and couldn't make himself known to the other workers around there, so I had

(Deposition of Charles Wackes.)

charge over the room and he was the head tinsmith.

XQ. 83. You said while you were at Hawthorne & Sheble they made many shapes of horns?

A. Yes, sir.

XQ. 84. What were the shapes?

A. The most shapes were straight horns, the bell soldered on the body or the bell was grooved on the body; and then they made those one-piece horns, all brazed together, and the bell was brazed on the body so it looked like one piece.

XQ. 85. I don't mean how they were made; I mean the different shapes.

A. Most of them were the same shapes as the long horn you have here in the catalogue (referring to page 16 of Complainant's Exhibit Damage Hawthorne & Sheble Catalogue); that is the most shape was made (referring to page 33 of the Catalogue).

XQ. 86. What was the shape of the glass horns which you saw at Hawthorne & Sheble's?

A. That was a short horn with a wide bell on it.

XQ. 87. Shaped like a flower.

A. Shaped pretty near like a flower horn, just shorter; it was flapped out like a flower horn.

XQ. 88. Did it have scalloped edges?

A. It was all smooth edges.

XQ. 89. You say that Mr. Hawthorne brought a sample from New York? A. Yes.

XQ. 90. How do you know he brought it from New York? A. He told us.

XQ. 91. Told who? A. He told me.

XQ. 92. Did he tell you where he got it?

(Deposition of Charles Wackes.)

A. No, he just said he brought it from New York.

XQ. 93. How many sections were in that horn?

A. About eight or nine.

XQ. 94. You don't know exactly how many?

A. No, I couldn't remember no more. [724]

XQ. 95. How were the sections joined together.

A. They were soldered together.

XQ. 96. Was there a seam between the sections?

A. Yes, there was a seam, certainly.

XQ. 97. What sort of a seam?

A. A stand-up seam.

XQ. 98. Who made the first copy of that horn?

A. Charley Scheerer.

XQ. 99. Did he make an exact copy of it?

A. Yes, he did.

XQ. 100. Exactly like it? A. Yes, sir.

XQ. 101. The same sort of seam?

A. Yes, sir, the same sort of seam.

XQ. 102. When was this horn brought in by Mr. Hawthorne? A. About 1904.

XQ. 103. What part of 1904?

A. I cannot remember whether it was spring or fall, I couldn't say.

XQ. 104. Do you remember Kuenstle, who used to work there? A. Yes, sir.

XQ. 105. What did he do?

A. Make carrying cases.

XQ. 106. What else did he do?

A. Then afterwards, when we made those flower horns, he covered those horns and had charge of the department of dipping.

(Deposition of Charles Wackes.)

XQ. 107. Would he recollect when the first horn was brought in?

By Mr. HILLIARD.—I object to the question of what he would do.

A. I guess he had nothing to do with the first horn at all.

XQ. 108. Do you know whether he saw the first horn or not? A. I couldn't say.

XQ. 109. He says he did.

A. He might; he was in a different department altogether; he may have seen it before.

XQ. 110. He says the first sample horns were made in the first part of 1904 or possibly in 1903.

A. I don't think so.

XQ. 111. Do you agree with him?

A. I don't think it was until 1904.

XQ. 112. You don't know what part of 1904?
[725]

A. No, I couldn't tell you, there are so many different things between it.

XQ. 113. You are merely guessing at it?

A. I am positive it is in 1904.

XQ. 114. You are gussing at the time?

A. I am guessing at the time of the year.

XQ. 115. It might have been in the spring?

A. It might have been in the spring or might have been in the fall.

XQ. 116. What sort of seams did they make in the tin and brass horns?

A. Well, regular grooving seams, what they put on a stovepipe, just the same groove.

(Deposition of Charles Wackes.)

XQ. 117. Was that the same kind of a seam that was put on the first horn they brought in?

A. No, that first one that came in, the seams was soldered together.

XQ. 118. Did the edges of the sections overlap?

A. No, had sharp edges on them.

XQ. 119. Describe what it looked like.

A. The edge was bent up on the sides and from two leaves always the two edges soldered together.

XQ. 120. Were the seams straight?

A. No, they couldn't be straight, they were curved.

XQ. 121. Which way did they curve?

A. The long way of the horn.

XQ. 122. How many copies were made of this first horn?

A. Well, first they made only one sample; then afterwards they made different samples in a different way.

XQ. 123. What different way?

A. After the first one they started to make on one side the leaf—they put a groove in there, and on the other side of the leaf they put a straight edge on there and set one side in the groove in one leaf; they put a groove in one side of the leaf; each leaf had a [726] groove on one side and a straight edge on the other side, and the straight edge set inside from that groove and be soldered in there so it looks outside just the same it was grooved together.

XQ. 124. Why did you make them that way?

A. It looked better than with that straight edge on

(Deposition of Charles Wackes.)

there as the sample was.

XQ. 125. In other words, you made a regular tin-smith's lock seam?

A. No, it was no lock seam at all.

XQ. 126. Was it like the seam that is in a stove-pipe?

A. No, it never was that way; the stovepipe you don't have to solder; the seam we made there, that groove we made there wouldn't hold anything, it was only for show, to look like a seam; still it was soldered together; if it wasn't soldered it wouldn't hold.

XQ. 127. How many horns did you make like you have just described?

A. We made two or three months that way.

XQ. 128. About how many horns?

A. We turned out about two or three dozen a day.

XQ. 129. The machine that you bought to put them together was for the purpose of making this type of seam, was it?

A. That machine was extra made to groove them horns together to do away with the soldering business.

XQ. 130. What sort of a seam did the machine make?

A. It made just the same as on a stovepipe, lock seam.

XQ. 131. Who ran that machine?

A. Well, different fellers run the machine; Charley Scheerer runs the first one, then Charley McGowan he was the next one.

XQ. 132. Did you ever run it?

(Deposition of Charles Wackes.)

A. I worked on it; still, I did not run it; he ran it; I never had anything to do with it.

Cross-examination closed.

Deposition closed. [727]

[Deposition of William Kleimenhagen, for Complainant.]

WILLIAM KLEIMENHAGEN, a witness produced on behalf of complainant, being first duly cautioned and sworn, testified as follows:

Direct Examination by Mr. HILLIARD.

Q. 1. What is your name and age?

A. William Kleimenhagen; age, 48.

Q. 2. And your resident and occupation?

A. 4122 North Seventh Street, Philadelphia; occupation, polisher.

Q. 3. How long have you been a polisher?

A. I am a polisher for 26 years.

Q. 4. Did you know the concern of Hawthorne & Sheble, of Philadelphia, at any time?

A. I worked for them.

Q. 5. When did you go to work for them?

A. I guess it was 1898; I think it was 1898; I am not positive—1888 or 1898—I am not positive. It is easy enough to find out. I started there two weeks after President McKinley got elected the second time.

Q. 6. Was that in 1898?

A. Yes, I think it was in 1898; that was two weeks after he got elected the second time; I started on the 16th of November and he got elected about the 8th of November; that was a week after.

(Deposition of William Kleimenhagen.)

Q. 7. That was his second election?

A. His second election.

Q. 8. Are you sure it wasn't in 1903 that McKinley was elected the second time?

A. I couldn't say for sure; I think it was 1898 or 1899.

Q. 9. Didn't you tell me Sunday, when I saw you, that you went to work for Hawthorne & Sheble in 1903, and that you fix the date for the reason McKinley had just been elected the second time; was that correct? [728]

A. Yes, sir, that is what I told you. I am not sure whether it was 1903 or 1899; I am not sure about that. It is easy enough to find out.

Q. 10. It was after President McKinley was elected the second time; you are positive of that?

A. Yes.

Q. 11. What kind of horns were they making when you first went to work for them?

A. Nothing but the round horns.

Q. 12. How long did you work for them?

A. I worked for them for about ten and a half years; I worked till they closed up the business.

Q. 13. Do you know what a flower horn is?

A. Yes.

XQ. 14. What is a flower horn? How is it made?

A. Made out of about six or seven pieces of metal.

Q. 15. What is the shape of the pieces?

A. Wide in the front and narrow up to the top.

Q. 16. Are the edges of the pieces of which the flower horn is made straight or curved?

(Deposition of William Kleimenhagen.)

A. The edges on the long way or the end?

Q. 17. The long way.

A. When they are punched out they are straight; then they get bent over after, the edge get bent over.

Q. 18. Are both ends of the piece of the same width or different widths. Just consider the piece before it is put in the horn; what shape does it appear in?

A. It is wide in the front and runs up narrow to the top.

Q. 19. Does the edge of the piece run on an exact straight line in a flower horn, that is, before it is put in the horn?

A. It runs on a straight line and is wide on the bottom and narrow on the top.

Q. 20. How are the edges joined together?

A. Lapped together.

Q. 21. Did Hawthorne & Sheble make any horns like that which you [729] have described.

A. Lots of them.

Q. 22. When did they begin to make such horns?

A. I couldn't tell you.

Q. 23. Was it after you went to work for them?

A. Yes, after I went to work for them.

Q. 24. Can you say how long after you went to work for them did they make these horns?

A. It was about a year, or a year and a half after I went to work for them.

Q. 25. Do you remember when the Spanish War took place? A. Yes.

Q. 26. When was that?

A. I think it was in 1905 or 1906.

(Deposition of William Kleimenhagen.)

Q. 27. The Spanish War in 1905?

A. In 1908.

Q. 28. You mean, 1898.

By Mr. CRUSE.—I object to the examiner suggesting dates to the witness.

A. The Spanish War?

Q. 29. Do you mean the Spanish War was in 1908 or 1898? A. That was in 1898.

Q. 30. How long was it after the Spanish War that you went to work for Hawthorne & Sheble?

A. A year. That is a thing I cannot tell you very well; I did not keep books and can't keep it in my mind. I told you I started two weeks after President McKinley was elected the second time, and that is all I can tell you.

Q. 31. You were subpoenaed to come here, weren't you? A. Yes.

Q. 31. You told me Sunday that you wouldn't come and testify here, didn't you?

A. I had to come if you send that man up.

Q. 32. You told me Sunday you wouldn't come here and testify? A. Yes.

Q. 33. And your wife told you you couldn't come and testify, didn't she? [730]

A. Yes, when you send the marshal up I have to come; that is one sure thing.

Q. 34. You understand that you are under oath here, don't you?

A. Yes, I understand that.

Direct examination closed.

(Deposition of William Kleimenhagen.)

Cross-examination by Mr. CRUSE.

XQ. 35. You are not sure when Hawthorne & Sheble strated to make the flower horns, are you?

A. Not sure, no.

XQ. 36. You have no means of fixing the date?

A. No, that is impossible for me to do, that is impossible; I did not take that much notice of it.

Cross-examination closed.

Deposition closed.

By Mr. HILLIARD.—The testimony in the case of Searchlight Horn Company against Sherman, Clay & Co., will be proceeded with at Pittsburgh on the 14th day of August, 1914, under the notice of taking testimony served in that case, and according to agreement with defendant's counsel in that case.

By Mr. CRUSE.—Counsel for defendant asks when further testimony will be taken in this case, if any.

By Mr. HILLIARD.—Counsel for complainant states that he is at present unable to say. If any further testimony is taken in this case on behalf of the complainant, notice will be given in due form in pursuance with the statute.

[Endorsed]: Filed Feb. 3, 1916. W. B. Maling, clerk. By J. A. Schaertzer, Deputy Clerk. [731]

At a stated term, to wit, the November term, A. D. 1915, of the District Court of the United States of America, in and for the Northern District of California, Second Division, held at the courtroom in the City and county of San Francisco, on Monday, the 29th day of November, in the year of our Lord, one thousand nine hundred and fifteen. Present: The Honorable WILLIAM C. VAN FLEET, District Judge.

No. 30—EQUITY.

SEARCHLIGHT HORN CO.

vs.

COLUMBIA GRAPHOPHONE CO.

Order that Decree be Entered.

This suit heretofore submitted being now fully considered, it is ordered that a decree be signed, filed and entered in favor of plaintiff. [732]

At a stated term of the District Court of the United States for the Northern District of California, Second Division, to wit, the November, 1915 term, held at the courtroom thereof at the city and county of San Francisco, State of California, on the 29th day of November, A. D. 1915. Present: Honorable WILLIAM C. VAN FLEET, United States District Judge.

IN EQUITY.—No. 30.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

Interlocutory Decree.

This cause came on to be heard at this term and was argued by counsel; thereupon upon consideration thereof, it was ORDERED, ADJUDGED AND DECREED as follows, viz.:

1. That during all the time of the alleged acts of infringement mentioned in the bill of complaint, the plaintiff was and still is a corporation created under the laws of the State of New York; that at all said times the defendant was and is now a corporation created under the laws of the State of West Virginia, and up to and until February 1, 1913, was known as and called Columbia Phonograph Company General; that on said February 1st, 1913, defendant changed its name from Columbia Phonograph Company General to Columbia Graphophone [733] Company and ever since said last named ray has been and is now known as and called Columbia Graphophone Company.

2. That the letters patent of the United States, numbered 771,441, and dated October 4th, 1904, were duly issued and delivered by the Government of the United States to Peter C. Neilsen on October 4th, 1904, for improvements in horns for phono-

graphs or similar machines: that the said Peter C. Nielsen was the original and first inventor of the invention described and claimed in said letters patent and that said letters patent are good and valid in law as to claims 2 and 3 thereof—those being the only claims in respect of which infringement was charged; that by virtue of the assignments in writing duly executed and delivered and thereafter recorded in the Patent Office of the United States, the Searchlight Horn Company, plaintiff herein, on January 4, 1907, became and ever since has been and is now the sole owner and holder of the said letters patent and all the rights, liberties and privileges by them granted and conferred, together with all rights, claims, demands and causes of action arising out of past infringements of said letters patent.

3. That the invention covered by said letters patent and protected by claims 2 and 3 thereof is of value and utility and the plaintiff and its predecessors have practiced the same, and made and sold devices covered thereby, and upon each of the said devices so made and sold have stamped the word "Patented," together with the date and number of the said letters patent.

4. That since the issuance of said letters patent and within six years prior to the commencement of this suit, and within the Northern District of California and elsewhere in the United States, the defendant herein (known as Columbia [734] Phonograph Company General, prior to February 1, 1913,

and since then as Columbia Graphophone Company) without the license or consent of plaintiff, has infringed upon claims 2 and 3 of said letters patent, No. 771,441, by selling horns for phonographs or similar machines containing and embodying the invention described in said letters patent and claimed and protected in and by claims 2 and 3 thereof, which said claims read as follows:

2. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally arranged strips of metal provided at their edges with longitudinal outwardly directed flanges whereby said strips are connected and whereby the body portion of the horn is provided on the outside thereof with longitudinally arranged ribs, said strips being tapered from one end of said horn to the other, substantially as shown and described.

3. A horn for phonographs and similar instruments, said horn being larger at one end than at the other and tapered in the usual manner, said horn being composed of longitudinally arranged strips secured together at their edges and the outer side thereof at the points where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.

And in particular the defendant has infringed upon said claims 2 and 3 by selling in connection with phonographs or similar machines, those certain horns known as and called "Flower Horns."

5. That each and all of the allegations of the bill

of complaint herein are true, and that none of the defenses set up in defendant's answer is sustained by the evidence and that each and all of said defenses be and the same are hereby overruled.

6. And it is further **ORDERED, ADJUDGED AND DECREED** that the defendant, Columbia Graphophone Company, a corporation created under the laws of the State of West Virginia, its officers, agents, servants, attorneys, workmen and employees, and each of them, be and they are hereby permanently enjoined and restrained [735] from making, using or selling any horn or horns for phonographs or similar machines containing or embodying the invention claimed and patented in and by said claims 2 and 3 of said letters patent No. 771,441, or either of them, and that a permanent writ of injunction be issued forthwith under the seal of this court commanding and enjoining the said defendant, its officers, agents, servants, attorneys, workmen and employees, as aforesaid.

7. That the plaintiff do have and recover of and from the defendant, Columbia Graphophone Company, the profits which the defendant has realized and the damages the plaintiff has suffered from and by reason of the infringement aforesaid, and for the purpose of ascertaining the amount of said damages and profits, it is **ORDERED, ADJUDGED AND DECREED** that this cause be referred to H. M. Wright, Esq., Standing Master in Chancery of this court, to ascertain, take, state and report to this Court an account of all the profits received, realized or accrued by or to the defendant and to

assess the damages suffered or sustained by the plaintiff from or by reason of the infringement aforesaid and that on said accounting the plaintiff have the right to cause an examination of the officers, agents, employees and servants of the defendant *ore tenus* or otherwise, and also the production of its books, vouchers, documents and records, and that the said officers of defendant attend for such purpose before the Master from time to time as the Master shall direct.

8. It is further ORDERED, ADJUDGED, AND DECREED that the plaintiff do have and recover its costs and disbursements in this suit taxed at the sum of \$68.80 up to this date, and such other and further costs as may hereafter accrue and be taxed against defendant.

Dated Dec. 2, 1915.

WM. C. VAN FLEET,
Judge. [736]

Service of the within Interlocutory Decree admitted this 1st day of December, A. D. 1915.

CHAS. E. TOWNSEND,
Attorney for Defendant.

[Endorsed]: Filed and entered December 2, 1915. Walter B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [737]

*In the District Court of the United States for the
Northern District of California, Second Division.*

No. 30—IN EQUITY.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

Petition for Order Allowing Appeal.

To the Honorable Court, Above Entitled:

The above-named defendant, Columbia Graphophone Company, conceiving itself aggrieved by the decree filed and entered on the 2d day of December, 1915, in the above-entitled cause, does hereby appeal therefrom to the United States Circuit Court of Appeals, for the Ninth Judicial Circuit for the reasons and upon the grounds specified in the assignment of errors, which is filed herewith, and prays that this appeal may be allowed, that a citation issue as provided by law, and that a transcript of the record, proceedings, exhibits and papers, upon which said decree was made and entered as aforesaid, duly authenticated, may be sent to the Circuit Court of Appeals for the Ninth Circuit, sitting at San Francisco.

And your petitioner further prays that an order be made fixing the amount of security which the defendant, Columbia Graphophone Company, shall

give and furnish upon such appeal, and that upon giving such security all further proceedings in this court be suspended and stayed until the determination of said appeal by said United States Circuit Court of Appeals for the Ninth Circuit.

C. A. L. MASSIE,

CHAS. E. TOWNSEND,

Solicitors for Columbia Graphophone Company, Defendant.

[Endorsed]: Filed Dec. 31, 1915. Walter B. Maling, Clerk. [738]

*In the United States Circuit Court of Appeals in
the Ninth Circuit in the Northern District of
California.*

COLUMBIA GRAPHOPHONE COMPANY,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY,

Appellee.

Assignment of Errors.

Now comes Columbia Graphophone Company, defendant in the cause in the court below, entitled "Searchlight Horn Company, Plaintiff vs. Columbia Graphophone Company, Defendant." In Equity—No. 30, in the District Court of the United States for the Northern District of California, Second Division, and appellant herein, by C. A. L. Massie, Esq. and Chas. E. Townsend, Esq., its solicitors and counsel, and say that in the record and

proceedings in the said cause in the said court below there is manifest error, and it particularly specifies the following as the errors upon which it will rely and which it will urge upon its appeal in the above-entitled cause:

1. That the district Court of the United States for the Northern District of California erred in holding that the claims of plaintiff's patent, or any of them, and especially claims 2 and 3 sued on, were, or either of them, valid.

2. That the District Court of the United States for the Northern District of California erred in holding that the claims of plaintiff's patent, and especially the claims sued on, were not each and all anticipated by the prior art.

3. That the District Court of the United States for [739] the Northern District of California erred in holding that the claims of the plaintiff's patent sued on, or any of them, represented a patentable invention.

4. That the District Court of the United States for the Northern District of California erred in finding that more than mere mechanical skill was exhibited by Nielsen in view of the prior art.

5. That the District Court of the United States for the Northern District of California erred in not finding that on the evidence the Nielsen Patent was without patentable utility and novelty.

6. That the District Court of the United States for the Northern District of California erred in finding any utility in a horn constructed in full accordance with all of the disclosures of the Nielsen Pat-

ent which was not found equally well and to the same extent in horns of the prior art.

7. That the District Court of the United States for the Northern District of California erred in finding that there was no prior publication of the features embodied in the claims of the Nielsen Patent, such as would invalidate it.

8. That the District Court of the United States for the Northern District of California erred in not holding that the design of the Nielsen patented horn was without utility.

9. That the District Court of the United States for the Northern District of California erred in determining and deciding that the patentee of the patent in suit was the first and original of any inventor or discoverer of the said alleged invention as described and claimed in the said patent and the specifications annexed thereto. [740]

10. That the District Court of the United States for the Northern District of California erred in holding that claim 2 of the Nielsen Patent in suit was infringed by the defendant.

11. That the District Court of the United States for the Northern District of California erred in holding that claim 3 of the Nielsen Patent in suit was infringed by the defendant.

12. That the District Court of the United States for the Northern District of California erred in holding that the defendant infringed any of the claims of the Nielsen Patent in suit.

13. That the District Court of the United States for the Northern District of California erred in con-

struing the claims of the Nielsen Patent so broadly as to include any horns used or sold by the defendant.

14. That the District Court of the United States for the Northern District of California erred in enjoining the defendant.

15. That the District Court of the United States for the Northern District of California erred in granting an injunction against the defendant, on the ground that the plaintiff was not entitled to such relief because of laches, as set forth in defendant's answer.

16. That the District Court of the United States for the Northern District of California erred in ordering an accounting by the defendant on the ground that the plaintiff was not entitled to such relief because of laches, as set forth in the defendant's answer.

17. That the District Court of the United States for the Northern District of California erred in ordering an [741] accounting by the defendant on the ground that the plaintiff failed to show that its horns made under the Nielsen Patent were marked "Patented" as required by law.

18. That the District Court of the United States for the Northern District of California erred in ordering an accounting by the defendant on the ground that the plaintiff has failed to show that it notified the defendant of its alleged infringement of the Nielsen Patent in suit.

19. That the District Court of the United States for the Northern District of California erred in not

finding and holding that on the evidence the Nielsen Patent was void as containing less than the whole truth relative to the alleged invention or discovery or more than was necessary to produce the desired result, in that the so-called results of the Nielsen Patent were not and are not obtainable by the method or methods or construction therein shown, or described, or claimed.

20. That the District Court of the United States for the Northern District of California erred in not holding that the so-called extensive or general use of the Nielsen patented horn was due to extensive advertising or greater business efforts in bringing the horns to the attention of the public rather than to any particular merit of the device.

21. That the District Court of the United States for the Northern District of California erred in finding in favor of the plaintiff and against the defendant on the ground that the evidence was insufficient to support the findings of the Court.

22. That the District Court of the United States for the Northern District of California erred in sustaining the bill of complaint.

23. That the District Court of the United States for the [742] Northern District of California erred in *not* dismissing the complaint as prayed for by the defendant.

In order that the foregoing assignments of errors may be and appear of record, the appellant presents the same to the Court, and prays that such disposition be made thereof as in accordance with the law

and the statutes of the United States in such cases made and provided.

All of which is respectfully submitted.

C. A. L. MASSIE,
CHAS. E. TOWNSEND,
Solicitors for Appellant.

[Endorsed]: Filed Dec. 21, 1915. Walter B. Mal-
ing, Clerk. [743]

*In the District Court of the United States for the
Northern District of California, Second Divi-
sion.*

IN EQUITY—No. 30.

SEARCHLIGHT HORN COMPANY,
Plaintiff,
vs.

COLUMBIA GRAPHOPHONE COMPANY,
Defendant.

Order Allowing Withdrawal of Original Exhibits.

On motion of C. A. L. Massie, Esq., and Charles E. Townsend, Esq., solicitors and of Counsel for Columbia Graphophone Company, Defendant, and good cause appearing therefor, it is by the Court now ordered:

That all the exhibits in the above-entitled case, both plaintiff's exhibits and defendant's exhibits, and all of the exhibits in the case of Searchlight Horn Co. vs. Pacific Phonograph Co., No. 18, pending in this court, including models, drawings, copies of patents, books and printed publications, and which are impracticable to have copied or duplicated, be, and

hereby are, allowed to be withdrawn from the files of the court in this case, and in the said Pacific Phonograph case, No. 18, and transmitted by the clerk of this court to the United States Circuit Court of Appeals for the Ninth Circuit as a part of the record upon appeal for the defendant herein to said Circuit Court of Appeals; said original exhibits to be returned to the files of this court upon the determination of said appeal by said Circuit Court of Appeals.

WM. C. VAN FLEET,

Judge.

Dated December 31st, 1915.

[Endorsed]: Filed Dec. 31, 1915. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk. [744]

*In the District Court of the United States for the
Northern District of California, Second Division.*

No. 30—IN EQUITY.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

Order Allowing Appeal.

The foregoing petition for appeal is hereby granted and the appeal is allowed and upon the petitioner filing a bond in the sum of One Thousand (\$1,000) Dollars with sufficient sureties, to be conditioned as required by law, shall operate to suspend

and stay all further proceedings in this court until the determination of said appeal by the United States Circuit Court of Appeals for the Ninth Circuit.

WM. C. VAN FLEET,
Judge.

[Endorsed]: Filed Dec. 31, 1915. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk. [745]

*In the District Court of the United States for the
Northern District of California, Second Division.*

No. 30—IN EQUITY.

SEARCHLIGHT HORN COMPANY,
Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,
Defendant.

Amended Order Allowing Appeal.

The order allowing appeal heretofore made and filed in this court on December 31, 1915, is hereby amended to read as follows:

The foregoing petition for appeal is hereby granted and the appeal is allowed and upon the petitioner filing a bond in the sum of Five Thousand (\$5,000) Dollars with sufficient sureties, to be conditioned as required by law, shall operate to suspend and stay all further proceedings in this court until the determination of said appeal by the United States Circuit Court of Appeals for the Ninth Circuit.

It is further ordered that the filing of a bond in the sum of Four Thousand (\$4,000) Dollars in addition to the one of One Thousand (\$1,000) Dollars now on file shall be a full compliance with this order.

This order is made *nunc pro tunc* as of December 31, 1915.

WM. C. VAN FLEET,
Judge.

Dated January 18th, 1916.

[Endorsed]: Filed Jan. 18, 1916. W. B. Maline,
Clerk. By J. A. Schaertzer, Deputy Clerk. [746]

*In the District Court of the United States for the
Northern District of California, Second Division.*

No. 30—IN EQUITY.

SEARCHLIGHT HORN COMPANY,
Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,
Defendant.

Bond on Appeal.

KNOW ALL MEN BY THESE PRESENTS:
That we, the Columbia Graphophone Company, the appellant herein, as principal, and The Aetna Accident and Liability Company, a corporation duly organized and existing under the laws of the State of Connecticut and duly licensed to transact its business in the State of California, as surety, are held and firmly bound unto the above-named appellee, the Searchlight Horn Company, in the sum of One Thou-

sand (\$1,000) Dollars, lawful money of the United States of America, for the payment of which, well and truly to be made unto the said Searchlight Horn Company, its successors and assigns, we bind ourselves, our successors and assigns, jointly and severally, firmly by these presents; upon condition nevertheless, that

WHEREAS, the said appellant has an appeal to the United States Circuit Court of Appeals for the Ninth Circuit to reverse the interlocutory decree rendered and entered by the District Court of the United States, in and for the Northern District of California, in the case entitled "Searchlight Horn Company vs. Columbia Graphophone Company," numbered on the equity docket as 30, which said interlocutory decree was rendered [747] and entered in said District Court on the 2d day of December, 1915, and an appeal allowed superseding said decree.

NOW, THEREFORE, the condition of this obligation is such that if the above-named appellant shall prosecute said appeal to effect and answer all damages and costs, if it shall fail to make its plea good, then this obligation shall be void, otherwise to remain in full force and effect.

In witness whereof, the corporate name and seal of the said principal is hereunto affixed and attested by its duly authorized officer and the corporate name and seal of the said surety is hereunto affixed and attested by its duly authorized officer, at San Fran-

cisco, California, this 31st day of December, 1915.

COLUMBIA GRAPHOPHONE COMPANY.

By I. A. DENISON,

District Manager.

THE AETNA ACCIDENT AND LIABILITY
COMPANY.

By G. D. STUART,

Resident Vice-president.

Attest: W. P. KARR, [Seal]

Resident Asst. Secretary.

Approved this 31st day of December, 1915.

WM. C. VAN FLEET,

Judge.

[Endorsed]: Filed Dec. 31, 1915. Walter B. Mal-
ing, Clerk. [748]

THE AETNA ACCIDENT AND LIABILITY
COMPANY,

Hartford, Connecticut.

MORGAN G. BULKELEY, President.

*In the District Court of the United States for the
Northern District of California, Second Divi-
sion.*

No. 30—IN EQUITY.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

Bond on Appeal.

KNOW ALL MEN BY THESE PRESENTS: That we, the Columbia Graphophone Company, the appellant herein, as principal, and The Aetna Accident and Liability Company, a corporation organized and existing under the laws of the State of Connecticut, and duly licensed to transact its business in the State of California, as surety are held and firmly bound unto the above-named appellee, The Searchlight Horn Company, in the sum of Four Thousand (\$4,000) Dollars, lawful money of the United States of America, for the payment of which, well and truly to be made unto the said Searchlight Horn Company, its successors or assigns, we bind ourselves, our successors and assigns, jointly and severally, firmly by these presents; upon condition nevertheless, that

WHEREAS, the said appellant has an appeal to the United States Circuit Court of Appeals for the Ninth Circuit to reverse the interlocutory decree rendered and entered by the District Court of the United States, in and for the Northern District of California, in the case entitled "Searchlight Horn Company vs. Columbia Graphophone Company" numbered on the equity docket as 30, which said interlocutory decree was rendered and entered in said District Court on the 2d day of December, 1915, and an appeal allowed superseding said decree.

NOW, THEREFORE, the condition of this obligation is such that if the above-named appellant shall prosecute said appeal to effect and answer all damages and costs, if it shall fail to make its plea good,

then this obligation shall be void, otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the corporate name and seal of the said principal is hereunto affixed and attested by its duly authorized officer and the corporate name and seal of the said surety is hereunto affixed and attested by its duly authorized officers at San Francisco, California, this eighteenth day of January, 1916.

COLUMBIA GRAPHOPHONE CO.

F. A. DENISON,

Dist. Manager.

[Seal] THE AETNA ACCIDENT AND LIABILITY COMPANY.

By G. D. STUART,

Resident Vice-president.

Attest: W. P. KARR,

Resident Asst. Secretary. [749]

The within bond is approved this 18th January, 1916.

WM. C. VAN FLEET,

Judge.

[Endorsed]: Filed Jan. 18, 1916. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [750]

[Copy of Docket Entries.]
United States District Court.

Docket 30.				
Title of Case.			Attorneys.	
SEARCHLIGHT HORN COMPANY,			John H. Miller, substituted for	
			John H. Miller & W. K. White,	
vs.			Eq: Infringement of Patent.	
COLUMBIA GRAPHOPHONE COM-			C. A. Massie—Ralph L. Scott	
PANY.			Mauro, Cameron, Lewis & Mas-	
			sie, Chas. E. Townsend.	
Date.				
Month.	Year.	Year.	Filings—Proceedings.	
July	24,	1913.	Filed Bill of Complaint. Filed	
			Praecipe. Issued Subpoena ad	
			res. and 1 copy.	
"	29,	"	Filed Subpoena ad res., with Mar-	
			shal's return showing service on	
			Columbia Graphophone Co., on	
			July 24, 1913.	
Aug.	18,	"	Filed Stipulation ex. time to an-	
			swer, etc.	
Oct.	20,	"	Filed Answer.	
Jan.	9,	1914.	Filed Stipulation and Order ex-	
			tending time to take deposi-	
			tions. Entered Order. (O. B.	
			No. 1, p. 171).	
Mar.	2,	"	Ord. cause stricken from Calendar.	
Apr.	13,	"	Filed Stipulation and Order ex.	
			time—depositions. Entered Or-	
			der (O. B. 1, p. 239).	
May	14,	"	Filed Stip. and Order ex. time.	
			Entered Order (O. B. 1, p. 258).	

Date.			Filings—Proceedings.
Month.	Year.	Year.	
June	9,	“	Filed Stipulation and Order ex. time. Entered Order (O. B. 1, p. 330).
June	25,	“	Filed Stipulation and Order as to time for taking Depositions. Entered Order (O. B. No. 1, p. 337). [751]
July	14,	1914.	Filed Notice of Motion and Affidavit for Preliminary Injunction.
“	27,	“	Ord. mo. con. to Aug. 10.
Aug.	6,	“	Filed Letter associating counsel.
“	10,	“	Ord. mo. con. to 24.
“	24,	“	Ord. mo. con. to 31.
Sept.	14,	“	Ord. mo. con. to 28.
Oct.	5,	“	Ord. mo. con. to 26.
“	26,	“	Ord. mo. con. to Nov. 9.
Nov.	9,	“	Ord. cause dropped from Calendar. Or. mo. con. to 16.
“	16,	“	Ord. mo. con. to 23.
“	23,	“	Ord. mo. con. to 30.
“	30,	“	Ord. mo. con. to Dec. 7.
Dec.	7,	“	Ord. mo. con. to 14.
“	14,	“	Ord. mo. con. to 21.
“	21,	“	Ord. mo. con. to Jan. 4, '15.
“	31,	“	Filed Notice of substitution of Atty.
Jan.	4,	1915.	Ord. mo. con. to 11.
“	11,	“	Ord. mo. con. to 18.
“	18,	“	Ord. mo. con. to 25.

942 *Columbia Graphophone Company vs.*

Date.			Filings—Proceedings.
Month.	Year.	Year.	
"	25,	"	Ord. mo. con. to Feb. 1.
Feb.	1,	"	Ord. mo. con. to 8.
"	8,	"	Ord. con. to 15.
Feb.	11,	"	Filed Notice of Motion to restore case to calendar.
"	15,	"	Ord. mo. for preliminary injunction con. to Mar. 15. Ord. mo. to restore cause to calendar granted.
Mar.	1,	"	Ord. cause set for 31.
"	15,	"	Ord. mo. con. to 22.
"	22,	"	Filed stipulation continuing cause. Ord. cause dropped from Calendar. Ord. motion for injunction granted and preliminary injunction issue, bond fixed at \$2000. [752]
Mar.	24,	1915.	Filed Bond on Preliminary Injunction. Issued Writ of Injunction. Made 2 attested copy of Writ of Injunction. Filed Writ of Injunction.
June	16,	"	Filed Stipulation regarding admission of evidence at trial.
"	21,	"	Filed Notice of Motion to reinstate case on Calendar.
"	28,	"	Ord. motion to reinstate cause on Calendar granted.
July	26,	"	Ord. cause set for Aug. 17.

Date.			Filings—Proceedings.
Month.	Year.	Year.	
Aug.	13,	“	Filed Stipulation and Order continuing trial of case. Entered Order (O. B. 2, p. 395). Filed Notice and Motion to Amend Answer, etc.
“	16,	“	Ord. mo. con. to 23.
“	23,	“	Ord. mo. to amend ans. heard and granted.
“	26,	“	Ord. dropped from trial Cal. and placed on Nov. term Cal.
Nov.	1,	“	Ord. cause set for Nov. 16.
“	22,	“	Filed Notice of Motion for continuance, etc.
“	23,	“	Ord. motion to continue suit for term argued, submitted and denied, and cause submitted.
“	29,	“	Ord. decree signed, filed and entered in favor of plff.
Dec.	2,	“	Filed and entered Interlocutory Decree (Eq. Journal No. 2, p. 188).
“	6,	“	Filed Praecipe. Made certified copy of Interlocutory Decree. Filed Memorandum of Costs.
“	31,	“	Filed Petition for Appeal. Filed Assignment of Errors. Filed and entered Order allowing Appeal. (O. B. 3, p. 142). Filed and entered Order allowing withdrawal of original exhibits. (O. B. 3, p. 143). Filed Bond on Appeal.

944 *Columbia Graphophone Company vs.*

Date.	Month.	Year.	Year.	Filings—Proceedings.
Jan.	3,	1916.		Filed Citation on Appeal.
“	14,	“		Filed Notice of Motion to vacate Order staying [753] proceedings, etc.
“	17,	“		Ord. order allowing appeal and fixing amount of bond amended, etc.
“	18,	“		Filed Add'l. Bond on Appeal. Filed and entered Amended Order allowing appeal. (O. B. 3, p. 182.)
“	22,	“		Filed Reporter's Transcript of Proceedings of Nov. 23, 1915. Filed Praeipe for Transcript on Appeal.
“	25,	“		Filed Plffs. Praeipe.
“	26,	“		Filed Notice of Motion to vacate Order staying proceedings.
“	31,	“		Ord. mo. con. to Feb. 7.
Feb.	7,	“		Ord. motion to vacate order staying proceedings argued and submitted.
“	8,	“		Filed Defts. reply mem. on motion to vacate order staying proceedings. [754]

*In the District Court of the United States for the
Northern District of California, Second Division.*

IN EQUITY—No. 30.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

Praeceptum for Transcript on Appeal.

To the Clerk of U. S. District Court:

Please incorporate the following papers, documents and exhibits in the transcript of record on appeal in the above-entitled cause:

1. Bill of Complaint.
2. Defendant's Answer.
3. Amendment to the Answer embodied in defendant's Motion to amend on file.
4. Stipulation of June 10, 1915, on file concerning admission of evidence, etc.
5. Reporter's transcript of proceedings on final hearing.
6. Opinion of the Court in the case of the same plaintiff vs. Pacific Phonograph Co., in Equity #18 in this Court, decided November 29th, 1915.
7. Interlocutory decree of December 2, 1915.
8. Petition for Order Allowing Appeal.
9. Petition allowing withdrawal of Exhibits.
10. Order allowing appeal.

11. Assignment of Errors.
12. Amended Order Allowing Appeal.
13. Memorandum of bonds on appeal.
14. Citation.
15. Docket Entries (District Court) in the cause.
[755]
16. Copy of Praeceptum.
17. Order re Form of Record on Appeal.
18. The depositions and testimony of the following
named witnesses:

On behalf of plaintiff on file in this court in cases #15,623 of the same plaintiff vs. Sherman, Clay & Company and #18 of the same plaintiff vs. the Pacific Phonograph Company: Christian Krabbe, Ed. A. Merritt, William H. Locke, Jr., Arthur Pettit, and constituting the plaintiff's record in chief.

On behalf of the defendant the depositions of the following-named witnesses on file in said suits of the same plaintiff vs. Sherman, Clay & Company, #15,623, and the same plaintiff vs. Pacific Phonograph Company, #18, to wit: Rudolph Hunter, W. H. Miller, Harvey N. Emmons, Ed. W. Meeker, Frank H. Stewart, J. Kaiser, C. A. Senne, E. A. Hawthorne, William J. Elwell, John H. George, William A. Lawrence, William E. Parker, Eugene Henry Byrnes, Paul Kohler, Harry Leeming, Albert C. Ireton.

On behalf of plaintiff in rebuttal: Baldwin Vale, McNeill, Kuenstle, Sheerer, Domidge, Mayer, Wacks and Kleimenhagen on file in said cases #15,623 and #18.

Together with all exhibits introduced in connec-

tion with any and all of said depositions and the exhibits introduced on final hearing herein; including all the prior patents and printed publications introduced by the defendants in either of said case #15-623 and #18.

C. A. L. MASSIE,
CHAS. E. TOWNSEND,

Attorneys for Defendant-Appellant.

Service of copy of the within Praeceptum for Transcript on Appeal, admitted this 22d day of January, A. D. 1916.

JOHN H. MILLER,
Atty. for Plaintiff.

[Endorsed]: Filed Jan. 22, 1916. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk. [756]

*In the District Court of the United States for the
Northern District of California, Second Division.*

IN EQUITY—No. 30.

SEARCHLIGHT HORN COMPANY,
Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,
Defendant.

**Praeceptum of Plaintiff Regarding Record on Appeal
Pursuant to Equity Rule 75.**

To the Clerk of the Above-entitled Court:

Now comes the plaintiff in the above-entitled suit in pursuance to provisions of Equity Rule 75, and

indicates the following additional portions of the record desired by it to be incorporated in the Transcript on Appeal, the same not having been indicated or specified in the praecipe heretofore filed by defendant on January 22d, 1916, that is to say:

1. Stipulation between the parties dated January 6, 1914, and filed January 9th, 1914, extending time to take depositions.
2. Stipulation dated April 9, 1914, and filed April 13, 1914, extending time to take depositions.
3. Stipulation dated May 11, 1914, and filed May 14, 1914, extending time to take depositions.
4. Stipulation dated May 29, 1914, and filed June 9, 1914, extending time to take depositions.
5. Stipulation dated June 24, 1914, and filed June 25th, 1914, extending time to take depositions.
6. Notice of motion for preliminary injunction and attached affidavits of Locke, Vale and Miller, together with the exhibits [757] referred to therein.
7. Order granting preliminary injunction.
8. Writ of Injunction.
9. Minute Order for Interlocutory decree.
10. Two bonds on appeal furnished by defendant.

JOHN H. MILLER,

Attorney for Plaintiff-Appellee.

Service of the within Praecipe of Plaintiff regarding record on appeal pursuant to Equity Rule 75 admitted this 25th day of January, A. D. 1916.

CHAS. E. TOWNSEND,

Attorney for Defendant-Appellant.

[Endorsed]: Filed Jan. 25, 1916. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk. [758]

*In the District Court of the United States, in and
for the Northern District of California, Second
Division.*

No. 30—EQUITY.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

**Clerk's Certificate to Transcript of Record on
Appeal.**

I, Walter B. Maling, Clerk of the District Court of the United States, in and for the Northern District of California, do hereby certify the foregoing seven hundred fifty-eight (758) pages, numbered from 1 to 758 inclusive, to be full, true and correct copies of the records and proceedings as enumerated in the praecipes for transcript of record (omitting therefrom the original exhibits, which by order of Court are transmitted herewith), as the same remain on file and of record in the above-entitled cause, and that the same constitute the record on appeal to the United States Circuit Court of Appeals for the Ninth Circuit.

I further certify that the cost of the foregoing transcript of record is \$463.20; that said amount was paid by Charles E. Townsend, Esq., attorney for defendant; and that the original Citation issued

herein is hereunto annexed.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seal of said District Court this 10th day of March, A. D. 1916.

[Seal]

WALTER B. MALING,

Clerk.

By J. A. Schaertzer,

Deputy Clerk.

[Ten Cent Internal Revenue Stamp. Canceled
3/10/16. J. A. S.] [759]

[Citation on Appeal.]

UNITED STATES OF AMERICA,—ss.

The President of the United States, To the Searchlight Horn Company, Greeting:

You are hereby cited and admonished to be and appear at a United States Circuit Court of Appeals for the Ninth Circuit, to be holden at the city of San Francisco, in the State of California, within thirty days from the date hereof, pursuant to an order allowing an appeal, of record in the clerk's office of the United States District Court for the Northern District of California, wherein the Columbia Graphophone Company is appellant, and you are appellee, to show cause, if any there be, why the decree rendered against the said appellant, as in the said order allowing appeal mentioned, should not be corrected, and why speedy justice should not be done to the parties in that behalf.

WITNESS, the Honorable WILLIAM C. VAN FLEET, United States District Judge for the

Northern District of California, this 3d day of January, A. D. 1916.

WILLIAM C. VAN FLEET,
United States District Judge. [760]

[Endorsed]: No. 30. United States District Court for the Northern District of California. Columbia Graphophone Company, Appellant, v̄s. Searchlight Horn Company. Citation on Appeal. Filed Jan. 3, 1916. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

United States of America,—ss.

On this 3d day of January, in the year of our Lord one thousand nine hundred and sixteen, personally appeared before me, the undersigned notary, the subscriber, Arne Hoisholt, and makes oath that he delivered a true copy of the within citation to Mr. Ober, the assistant clerk to John H. Miller, attorney for the appellee herein.

ARNE HOISHOLT.

Subscribed and sworn to before me at San Francisco, this 3d day of January, A. D. 1916.

[Seal]

W. W. HEALY,

Notary Public in and for the City and County of San Francisco, State of California.

[Endorsed]: No. 2759. United States Circuit Court of Appeals for the Ninth Circuit. Columbia Graphophone Company, a Corporation, Appellant, vs. Searchlight Horn Company, a Corporation, Appellee. Transcript of the Record. Upon Appeal

952 *Columbia Graphophone Company vs.*

from the United States District Court for the Northern District of California, Second Division.

Filed March 10, 1916.

FRANK D. MONCKTON,
Clerk of United States Circuit Court of Appeals for
the Ninth Circuit.

By Paul P. O'Brien,
Deputy Clerk.

*In the United States Circuit Court of Appeals for
the Ninth Circuit, Northern District of California.*

IN EQUITY.

COLUMBIA GRAPHOPHONE COMPANY,
Appellant,

vs.

SEARCHLIGHT HORN COMPANY,
Appellee.

Order Re Form of Record on Appeal.

Good cause appearing, it is ordered that the appellant in the above-entitled cause may file the evidence included in the record on appeal in the form of question and answer in the exact words of the witnesses.

WM. W. MORROW,
Judge.

Dated January 18, 1916.

[Endorsed]: No. 2759. In Equity. In the United States Circuit Court of Appeals, Ninth Circuit, Northern District of California. Columbia Graphophone Company, Appellant, vs. Searchlight Horn

Company, Appellee. Order Re Form of Record on Appeal. Filed Jan. 20, 1916. F. D. Monckton, Clerk. Refiled Mar. 10, 1916. F. D. Monckton, Clerk.

*In the United States Circuit Court of Appeals for
the Ninth Judicial Circuit.*

COLUMBIA GRAPHOPHONE COMPANY,
Appellant,

vs.

SEARCHLIGHT HORN COMPANY,
Appellee.

**Order Enlarging the Time of Appellant [to March
1, 1916] for Docketing the Cause and Filing the
Record on Appeal.**

Good cause appearing therefor, it is hereby ordered that the appellant in the above cause, Columbia Graphophone Company, have to and including March 1, 1916, within which to docket the cause and file the record on appeal.

WM. C. VAN FLEET,
Judge.

[Endorsed]: No. ——. In Equity. In the United States Circuit Court, Ninth Judicial Circuit. Columbia Graphophone Company, Appellant, vs. Searchlight Horn Company, Appellee. Order Enlarging the Time of Appellant for Docketing the Cause and Filing the Record on Appeal. Filed Jan. 29, 1916. F. D. Monckton, Clerk.

*United States Circuit Court of Appeals for the Ninth
Circuit.*

COLUMBIA GRAPHOPHONE COMPANY,
Appellant,

vs.

SEARCHLIGHT HORN COMPANY.

**Order Extending Time [to March 15, 1916], to
Docket Cause and File Record.**

Good cause appearing therefor, it is ordered that the Appellant do have to and including the 15th day of March, 1916, within which to file the record thereof and docket the cause in the United States Circuit Court of Appeals for the Ninth Circuit.

Dated February 24, 1916.

WM. C. VAN FLEET,
United States District Judge.

[Endorsed]: No. —. United States Circuit Court of Appeals for the Ninth Circuit. Order Under Rule 16 Enlarging Time to March 15, 1916, to File Record Thereof and to Docket Case. Filed Feb. 24, 1916. F. D. Monckton, Clerk.

No. 2759. United States Circuit Court of Appeals for the Ninth Circuit. Two Orders Under Rule 16 Enlarging Time to March 15, 1916, to File Record Thereof and to Docket Case. Refiled Mar. 10, 1916. F. D. Monckton, Clerk.

No. 2759

United States
Circuit Court of Appeals

For the Ninth Circuit.

COLUMBIA GRAPHOPHONE COMPANY, a Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corporation,

Appellee.

VOLUME IV.

Transcript of Record.

(Pages 955 to 1190, Inclusive.)

Upon Appeal from the United States District Court for the
Northern District of California, Second Division.

Filed

MAY 31 1910

F. D. Munckton,

Clerk.

United States
Circuit Court of Appeals
For the Ninth Circuit.

COLUMBIA GRAPHOPHONE COMPANY, a Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corporation,

Appellee.

VOLUME IV.

Transcript of Record.

(Pages 955 to 1190, Inclusive.)

Upon Appeal from the United States District Court for the
Northern District of California, Second Division.

INDEX TO THE PRINTED TRANSCRIPT OF RECORD.

[Clerk's Note: When deemed likely to be of an important nature, errors or doubtful matters appearing in the original certified record are printed literally in italic; and, likewise, cancelled matter appearing in the original certified record is printed and cancelled herein accordingly. When possible, an omission from the text is indicated by printing in italic the two words between which the omission seems to occur. Title heads inserted by the Clerk are enclosed within brackets.]

	Page
Affidavit of John H. Miller on Motion to Vacate	
Order Staying Proceedings, etc.....	958

EXHIBITS:

British Letters Patent No. 5186 to Frederick Charles Cockman	1188
British Letters Patent No. 17,786 to Henry Fairbrother	1175
British Letters Patent No. 20,567 to John Mesney Tourtel	1182
Exhibit—Letters Patent No. 769,410, to E. A. Schoettel, Patented September 6, 1904	1032
Exhibit No. 39—Letters Patent No. 811,877 to C. A. Senne, Patented February 6, 1906	1119
Exhibit No. 40—Letters Patent No. 797,725 to C. J. Eichhorn, Patented August 22, 1905	1101
Exhibit No. 41—Letters Patent No. 38,202, to C. J. Eichhorn, Patented August 28, 1906	1136
Exhibit No. 42—Letters Patent No. 38,273, to C. Beecroft, Patented October 9, 1906	1139

	Index.	Page
EXHIBITS—Continued:		
Exhibit No. 43—Letters Patent No. 38,274, to C. Beecroft, Patented October 9, 1906		1142
Exhibit No. 44—Letters Patent No. 926,235, to P. B. T. Berner, Patented June 29, 1909		1109
Exhibit No. 45—Letters Patent No. 38,602, to M. Steiner, Patented June 4, 1907..		1145
Exhibit No. 46—Letters Patent No. 967,618, to J. A. Davis, Patented August 16, 1910		1133
Exhibit No. 47—Letters Patent No. 921,676, to A. R. Cunnins, Patented May 18, 1909		1104
Exhibit No. 48—Letters Patent No. 917,404, to G. Benjamin and William Hanley, Patented April 6, 1909.....		1128
Letters Patent No. 829,066, to W. S. Fer- man, Patented August 21, 1906.....		1124
Plaintiff's Exhibit No. 2—Certified Copy of Assignment by P. C. Nielsen to Chris- tian Krabbe		967
Plaintiff's Exhibit No. 3—Certified copy of Assignment by Christian Krabbe to William H. Locke, Jr.....		970
Plaintiff's Exhibit No. 3—Letters Patent No. 771,441, to P. C. Nielsen, Patented October 4, 1904.....		1097
Plaintiff's Exhibit No. 4—Certified Copy of		

EXHIBITS—Continued:

Assignment by William H. Locke, Jr., to U. S. Horn Co.....	973
Plaintiff's Exhibit No. 5—Certified Copy of Assignment by Christian Krabbe to U. S. Horn Co.....	975
Plaintiff's Exhibit No. 6—Certified Copy of Assignment by U. S. Horn Co. to Searchlight Horn Co.....	978
Plaintiff's Exhibit No. 26—Letters Patent No. 759,639 to H. Sheble, Patented May 10, 1904.....	1067
Defendant's Exhibit "A"—British Letters Patent No. 732,422 to G. S. Saxton, Patented December 17, 1867.....	1148
Defendant's Exhibit "C"—Letters Patent No. 693,460 to S. Takaba, Patented February 18, 1902.....	1171
Defendant's Exhibit "E"—British Letters Patent No. 165,912, to W. H. Barnard, Patented July 27, 1875.....	1151
Defendant's Exhibit "G"—Letters Patent No. 409,196, to C. L. Hart, Patented August 20, 1889.....	990
Defendant's Exhibit "H"—Letters Patent No. 406,332, to J. C. Bayles, Patented July 2, 1889.....	1160
Defendant's Exhibit "N"—Letters Patent No. 699,928, to C. McVeety & J. S. Ford, Patented May 13, 1902.....	1023
Defendant's Exhibit "S"—Certified Copy	

INDEX.

Page

etc., be Certified to this Court and Printed as a Part of the Transcript of Record on Appeal.....	955
Order Shortening Time for Hearing of Above Motion.....	957
Stipulation as to Printing Patents in the Record	965

At a stated term, to wit, the October Term, A. D. 1915, of the United States Circuit Court of Appeals for the Ninth Circuit, held in the courtroom thereof, in the City and County of San Francisco, in the State of California, on Wednesday, the twenty-ninth day of March, in the year of our Lord one thousand, nine hundred and sixteen. Present: The Honorable WILLIAM B. GILBERT, Senior Circuit Judge, Presiding; Honorable ERSKINE M. ROSS, Circuit Judge; Honorable WILLIAM W. MORROW, Circuit Judge.

No. 2759.

COLUMBIA GRAPHOPHONE COMPANY, a Corporation,

Appellant,

vs.

SEARCHLIGHT HORN COMPANY, a Corporation,

Appellee.

Order Directing That Notice of Motion to Vacate Order of District Court Suspending and Staying Proceedings or in Default Thereof to Increase the Amount of Bond, etc., be Certified to This Court and Printed as a Part of the Transcript of Record on Appeal.

Upon motion of Mr. Charles E. Townsend, counsel for the appellant in the above-entitled cause, it is ORDERED that the Notice of Motion to Vacate Order of District Court Suspending and Staying

*In the District Court of the United States for the
Northern District of California, Second Division.*

IN EQUITY—No. 30.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

**Affidavit of John H. Miller on Motion to Vacate
Order Staying Proceedings, etc.**

State of California,

City and County of San Francisco,—ss.

John H. Miller, being duly sworn, deposes and says:

I am the attorney for plaintiff in the above-entitled suit.

Recently I caused an estimate to be made by competent parties in the East for the purpose of ascertaining approximately the number of infringing horns sold by the Columbia Graphophone Company and which would be subject to the accounting in this case. I have received written advices from these parties in the East, who report to me that a careful investigation indicates with a reasonable degree of certainty that the Columbia Graphophone Company has sold approximately one million one hundred thousand (1,100,000) of such infringing horns and for which they will be liable on the accounting.

While this statement is only an estimate, nevertheless I am informed that it is based upon reasonably reliable information, and I believe that it is approximately correct. In the Sherman, Clay & Company law action, the jury estimated the damages on the basis of fifty cents per horn, and in several licenses which the Searchlight Horn Company has issued since this litigation commenced a royalty of thirty-five cents per horn has been charged and paid. Upon the accounting herein I shall demand by way of damages fifty cents per horn, so far as the horns themselves are concerned together with additional items of damages caused by the infringement which have not yet been definitely fixed and which I shall shortly endeavor to fix and put in such shape as to present the matter before the Master.

As regards the profits of the defendant which will have to be accounted for, that I propose to prove by an examination of the books of the defendant. In view of these facts it is apparent that the bond for \$1,000.00 given by the defendant to suspend and stay all further proceedings in this Court until the determination of the appeal from the Interlocutory Decree, is wholly and utterly insufficient if its effect is to suspend the accounting. In order to justify the Court in an order suspending the accounting pending this appeal, I claim that a bond in the sum of no less than \$500,000.00 should be required.

JOHN H. MILLER.

Subscribed and sworn to before me this 13th day of January, 1916.

[Seal]

GENEVIEVE S. DONELIN,

Notary Public in and for the City and County of
San Francisco, State of California.

Service of the within notice of motion to vacate order suspending and staying proceedings or in default thereof to increase the amount of the bond and affidavit of John H. Miller admitted this 13th day of January, A. D. 1916.

CHAS. E. TOWNSEND,

For Defendant.

[Endorsed]: Filed Jan. 14, 1916. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk.

*In the District Court of the United States for the
Northern District of California, Second Division.*

IN EQUITY—No. 30.

SEARCHLIGHT HORN COMPANY,

Plaintiff,

vs.

COLUMBIA GRAPHOPHONE COMPANY,

Defendant.

**Notice of Motion to Vacate Order Staying
Proceedings.**

To Charles E. Townsend, Esq., Attorney for Defendant:

Take notice that on Monday, January 31, 1916, at ten o'clock A. M., or as soon thereafter as counsel

can be heard, plaintiff will move the above-entitled court at the courtroom thereof in the City and County of San Francisco, State of California, to set aside, vacate, and annul the order heretofore made by the Court on December 31, 1915, to the effect that upon defendant filing a bond in the sum of One Thousand Dollars further proceedings in this case be suspended and stayed until the determination of the appeal from the interlocutory decree, and also to vacate and set aside the amended order made in said case on January 18, 1916, providing that upon the defendant filing a bond in the sum of Five Thousand Dollars all further proceedings in the lower court be suspended and stayed until the determination of the appeal from the interlocutory decree:

The grounds of this motion will be as follows:

1. That the said two bonds filed by the defendant are not, nor is either of them, framed in such language or on such conditions as to protect and indemnify plaintiff against the damages it may suffer by reason of the suspension, stay and supersedeas of the order.

2. That said bonds are not, nor is either of them, conditioned as required by law for supersedeas bonds.

3. That both of said bonds are improperly executed and are not in such form as to operate as valid bonds for the following reasons:

- (a) They purport to be signed on behalf of the Principal—Columbia Graphophone Company—through and by “F. A. Dennison, District Manager,” but it does not appear that said F. A. Denni-

son as district manager had any authority to execute such bonds or to bind his principal thereby, nor is there any verification, justification or acknowledgment by said Dennison before an officer authorized to administer oaths; nor is there any corporate seal of the Columbia Graphophone Company attached; nor is there any showing that the Columbia Graphophone Company is a corporation.

(b) Said bonds purport to be signed on behalf of the surety, the Aetna Accident & Liability Company, through and by "G. S. Stuart, Resident Vice-President, and W. P. Barr, Resident Asst. Secretary"; but it does not appear that the said Stuart as resident vice-president and W. P. Barr as resident assistant secretary, had any authority to execute such bond or to bind their principals thereby; nor is there any verification or justification or acknowledgment by said Stuart and Barr, or either of them before an officer authorized to administer oaths.

4. No such bond has been executed by the defendant as is required by the rules of the Court of Appeals on appeals from an interlocutory decree granting an injunction.

On the hearing plaintiff will use, read and refer to the papers and pleadings on file and the bonds aforesaid.

Yours, etc.,

JOHN H. MILLER,

Attorney for Plaintiff.

Dated January 25, 1916.

Service of the within Notice of Motion admitted
this 25th day of January, A. D. 1916.

CHAS. E. TOWNSEND,

Attorney for Defendant.

[Endorsed]: Filed Jan. 26, 1916. W. B. Maling,
Clerk. By J. A. Schaertzer, Deputy Clerk.

At a stated term to wit, the March Term, A. D. 1916,
of the District Court of the United States of
America, in and for the Northern District of
California, Second Division, held at the court-
room in the City and County of San Francisco,
on Monday, the 6th day of March, in the year
of our Lord one thousand nine hundred and six-
teen. Present: The Honorable WILLIAM
C. VAN FLEET, District Judge.

No. 30—EQUITY.

SEARCHLIGHT HORN COMPANY

vs.

COLUMBIA GRAPHOPHONE CO.

Plaintiff's motion to vacate order for stay of
proceedings, heretofore heard and submitted, being
now fully considered and the Court having rendered
its oral opinion, it is ordered that said motion be and
the same is hereby denied.

No. 30—EQUITY.

SEARCHLIGHT HORN COMPANY

vs.

COLUMBIA GRAPHOPHONE COMPANY.

United States of America,
Northern District of California,
City and County of San Francisco,—ss.

I, Walter B. Maling, Clerk of the District Court of the United States of America, in and for the Northern District of California, do hereby certify the foregoing to be a full, true and correct copy of the original notice of motion to vacate order suspending and staying proceedings or in default thereof to increase the amount of bond filed January 14, 1916; Notice of motion to vacate order staying proceedings filed January 26, 1916; and order denying plaintiff's motion to vacate order for stay of proceedings made March 6, 1916, in the above-entitled cause, as the same remains of record and on file in the office of the Clerk of said Court.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said District Court this 30th day of March, A. D. 1916.

[Seal] WALTER B. MALING,
Clerk of the United States District Court, Northern District of California.

By J. A. Schaertzer,
Deputy Clerk.

[Ten Cent U. S. Internal Revenue Stamp. Canceled March 30, 1916. J. A. S.]

[Endorsed]: No. 2759. United States Circuit Court of Appeals for the Ninth Circuit. Order Directing that Notice of Motion to Vacate Order of District Court Suspending and Staying Proceedings or in Default Thereof to Increase the Amount

of Bond, etc. Filed Mar. 30, 1916. F. D. Monckton, Clerk.

*In the United States Circuit Court of Appeals, for
the Ninth Circuit, Northern District of Cali-
fornia.*

No. 2759—IN EQUITY.

COLUMBIA GRAPHOPHONE COMPANY (a
Corporation),

Appellant,

vs.

SEARCHLIGHT HORN COMPANY (a Corpora-
tion),

Appellee.

Stipulation as to Printing Patents in the Record.

It is hereby stipulated and agreed between the parties hereto, that the following patents, and only the following, need be printed or bound into the record:

Cairns—#10,235—Sept. 11, 1877 (Design)

McVeety & Ford—#34,907—Aug. 6, 1901 (Design)

Hart—#409,196—Aug. 20, 1889 (Patent)

Gersdorff—#453,798—June 9, 1891 (Patent)

Gersdorff—#491,421—February 7, 1893 (Patent)

Berliner—#534,543—Feb. 19, 1895 (Patent)

Myers—#647,147—April 10, 1900 (Patent)

Runge—#692,363—Feb. 4, 1902 (Patent)

McVeety & Ford—#699,928—May 13, 1902 (Patent)

Villy—#739,954—Sept. 29, 1903 (Patent)

Schoettel—#769,410—Sept. 6, 1904 (Patent)

Villy—#12,442—Jan. 30, 1906 (Reissue)

- Porter—#648,994—May 8, 1900 (Reissue)
Kaiser (Trademark)—#31,772—July 5, 1898
French Patent to Eugene Turpin—#318,742—Feb.
17, 1902
Sheble—#759,639—May 10, 1904 (Patent)
Nielsen—#771,441—Oct. 4, 1904 (Patent)
Eichorn—#797,725—Aug. 22, 1905 (Patent)
Cunnins—#921,676—May 18, 1909 (Reissue)
Berner—#926,235—June 29, 1909 (Reissue)
Senne—#811,877—Feb. 6, 1906 (Reissue)
Fernan—#829,066—Aug. 21, 1906 (Reissue)
Benjamin—#917,404—April 6, 1909 (Reissue)
Davis—#967,618—Aug. 16, 1910 (Reissue)
Eichorn—#38,202—Aug. 28, 1906 (Design)
Beecroft—#38,273—Oct. 9, 1906 (Design)
Beecroft—#38,274—Oct. 9, 1906 (Design)
Steiner—#38,602—June 4, 1907 (Design)
Saxton—#72,422—Dec. 17, 1867 (Patent)
Barnard—#165,912—July 27, 1875 (Patent)
Fallows—#181,159—Aug. 15, 1876 (Patent)
Penfield—#362,107—May 3, 1887 (Patent)
Bayles—#406,332—July 2, 1889 (Patent)
Clayton—#612,639—Oct. 18, 1898 (Patent)
Marten—#738,342—Sept. 8, 1903 (Patent)
Takaba—#693,460—Feb. 18, 1902 (Patent)
Fairbrother (British)—#17,786—Sept. 25, 1902

Tourtel (British)—#20,567—Aug. 20, 1903

Cockman (British)—#5,186—Dec. 31, 1903

CHAS. E. TOWNSEND,

Attorney for Appellant.

Dated _____

JOHN H. MILLER,

Attorney for Appellee.

April 7, 1916.

So ordered:

WM. W. MORROW,

Judge.

[Endorsed]: No. 2759—In Equity. In the United States Circuit Court of Appeals for the Ninth Circuit, Northern District of California. Columbia Graphophone Company (a Corporation), Appellant, vs. Searchlight Horn Company (a Corporation), Appellee. Stipulation as to Printing Patents in the Record. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

[Plaintiff's Exhibit No. 2.]

2—391.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come,
Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of an instrument of writing executed by

Peter Christhian Nielsen,

and

Recorded February 17, 1905, in Liber M-71, page 61.

Said record has been carefully compared with the

original and is a correct transcript of the whole thereof.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 6th day of July, in the year of our Lord one thousand nine hundred and eleven and of the Independence of the United States of America the one hundred and thirty-sixth.

F. A. TENNANT,
Assistant Commissioner of Patents.

Liber M-71,
Page 61.

ASSIGNMENT OF LETTERS PATENT.
TO ALL TO WHOM THESE PRESENTS SHALL
COME:

WHEREAS letters patent No. 771,441, bearing date the 4th day of October in the year of our Lord one thousand nine hundred and four, were granted and issued by the Government of the United States under the seal thereof to Peter C. Nielsen of Greenpoint, New York, for horns for phonographs or similar machines, a more particular and full description whereof is annexed to the said letters patent in a schedule; by which letters patent the full and exclusive right and liberty of making and using the said invention and of vending the same to others to be used, was granted to the said Peter C. Nielsen, his heirs, executors, administrators or assigns for the term of seventeen years from the same date.

NOW, KNOW ALL MEN BY THESE PRESENTS

That I, the said PETER C. NIELSEN for and in consideration of the sum of Seventeen hundred and sixty-four and 25/100 Dollars (\$1,764.25) to me in hand paid, the receipt whereof is hereby acknowledged, have granted, assigned and set over, and by these presents do grant, assign and set over unto CHRISTIAN KRABBE of the Borough of Brooklyn, County of Kings, City and State of New York, his executors, administrators and assigns forever, the said letters patent, and all my right, title and interest in and to the said invention so granted unto me,

TO HAVE AND TO HOLD the said letters patent and invention with all benefit, profit and advantage thereof unto the said Christian Krabbe, his executors, administrators and assigns, in as full, ample and beneficial manner to all intents and purposes as I, the said Peter C. Nielsen, by virtue of the said letters patent may or might have or hold the same for and during all the rest and residue of the said term of seventeen years.

IN WITNESS WHEREOF I have hereunto affixed my hand and seal this second day of February, 1905.

PETER CHRISTIAN NIELSEN. (L. S.)

In the presence of

L. W. WILSON, Jr.

City and State of New York,
Borough of Brooklyn,
County of Kings,—ss.

On this Tenth day of February, 1905, before me personally came PETER C. NIELSEN, to me known

and known to me to be the individual described in and who executed the foregoing instrument and he duly acknowledged that he executed the same.

[Seal]

G. J. DEMLIN,
Notary Public #118,
Kings County.

Recorded February 17, 1905.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Pltffs. Exhibit 2. Oct. 7, '12. W. B. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 2. Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 2. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

[Plaintiffs' Exhibit No. 3.]

2—391.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE.

To all persons to whom these presents shall come,
Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of an instrument of writing executed by

Christian Krabbe,
February 14, 1905,

and Recorded February 17, 1905, in Liber M-71, page
62.

Said record has been carefully compared with the

original and is a correct transcript of the whole thereof.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 6th day of July, in the year of our Lord one thousand nine hundred and eleven and of the Independence of the United States of America the one hundred and thirty-sixth.

F. A. TENNANT,

Assistant Commissioner of Patents.

Liber M-71,

Page 62.

WHEREAS I, Christian Krabbe of the Borough of Brooklyn, City of New York, County of Kings and State of New York, am the owner of the whole right, title and interest in and to an invention of an improved horn for phonographs or similar machines, and in and to Letters patent thereon granted to Peter C. Nielsen, bearing date of the 4th day of October in the year of our Lord 1904, and numbered Letters patent #771441 and WHEREAS, William H. Locke, Jr., of the Borough of Brooklyn, City of New York, County of Kings, State of New York, is desirous of acquiring an interest in said invention, and in the said letters patent.

NOW, THEREFORE I, the said Christian Krabbe, in consideration of one dollar to me in hand paid, the receipt of which is hereby acknowledged, hereby sell, assign and transfer unto said William H. Locke, Jr., one half of my undivided right, title and interest in and to said invention, Letters pat-

ent #771441 to the full end of the terms for which said letters patent is granted.

IN TESTIMONY WHEREOF I have hereunto set my hand and seal this 14th day of Feb. 1905.

CHRISTIAN KRABBE.

Witness:

DAVID W. BOYD.

State of New York,
City and County of New York,
Borough of Brooklyn,—ss.

On this 14th day of February, 1905, personally appeared before me Christian Krabbe to me known and known to me to be the person described in and who executed the foregoing assignment, and acknowledged to me that he executed the same.

[Seal]

G. J. DEMLIN,

Notary Public, #118, Kings County.

Recorded February 17, 1905.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Pltffs. Exhibit 3. Oct. 1, '12. W. B. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 3. Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 3. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

[Plaintiff's Exhibit No. 4.]

2—391.

DEPARTMENT OF THE INTERIOR,

United States Patent Office.

To all persons to whom these presents shall come,
Greeting:

THIS IS TO CERTIFY that the annexed is a true copy from the records of this office of an instrument of writing executed by

William H. Locke, Jr.,

February 24, 1905,

and

Recorded March 1, 1905, in Liber 0-71, page 40.

Said record has been carefully compared with the original and is a correct transcript of the whole thereof.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 6th day of July, in the year of our Lord one thousand nine hundred and eleven and of the Independence of the United States of America the one hundred and thirty-sixth.

F. A. TENNANT,

Assistant Commissioner of Patents.

Liber 0-71,

Page 40.

Whereas, I, William H. Locke, Jr., of the Borough of Brooklyn, City of New York, County of Kings and State of New York, am the owner of the undi-

vided one-half part of the whole right title and interest in and to an invention of an improvement in Horns for Phonographs or similar machines and in and to letters patent thereon granted to Peter C. Neilsen, October 4th, 1904, and numbered 771,441.

AND WHEREAS, the United States Horn Company of Brooklyn, N. Y., a corporation of New York is desirous of acquiring an interest in said invention and in the said letters patent

Now THEREFORE, I, the said William H. Locke, Jr., in consideration of one dollar to me in hand paid, the receipt of which is hereby acknowledged, hereby sell, assign and transfer unto said United States Horn Company and unto its successors and assigns all my right, title and interest in and to said invention, said letters patent number 771,441, to the full end of the term for which said letters patent is granted.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 24th day of February, Nineteen Hundred and Five.

WILLIAM H. LOCKE, Jr. [Seal]

Witness:

DAVID W. BOYD.

State of New York,
Borough of Brooklyn,
County of Kings,—ss.

On this 24th day of February, Nineteen Hundred and Five, personally appeared before me William H. Locke, Jr., to me known and known to me to be the person described in and who executed the fore-

going assignment and acknowledged to me that he executed the same.

DAVID W. BOYD,
Notary Public Kings Co., N. Y.
(No. 139)

Recorded March 1st, 1905.

[Endorsed]: No. 15,326. U. S. Dist. Court,
Nor. Dist. of Cal. Pltffs. Exhibit 4. Oct. 1, '12,
W. B. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for
the Ninth Circuit. Plaintiff's Exhibit 4. Received
Aug. 19, 1913. F. D. Monekton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the
Ninth Circuit. Plaintiff's Exhibit 4. Filed Apr.
8, 1916. F. D. Monekton, Clerk.

[Plaintiff's Exhibit No. 5.]

2—391.

DEPARTMENT OF THE INTERIOR,

United States Patent Office.

To all persons to whom these presents shall come,
Greeting:

THIS IS TO CERTIFY that the annexed is a
true copy from the records of this office of an instru-
ment of writing executed by

Christian Krabbe,

February 24, 1905,

and

Recorded March 1, 1905, in Liber 0-71, page 41.

Said record has been carefully compared with the
original and is a correct transcript of the whole
thereof.

IN TESTIMONY WHEREOF I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington, this 6th day of July, in the year of our Lord one thousand nine hundred and eleven and of the Independence of the United States of America the one hundred and thirty-sixth.

F. A. TENNANT,
Assistant Commissioner of Patents.

Liber 0-71,

Page 41.

WHEREAS, I, Christian Krabbe, of the Borough of Brooklyn, City of New York, am the owner of the undivided one-half part of the whole right, title and interest in and to an invention of an improvement in Horns for Phonographs or similar machines and in and to letters patent thereon granted to Peter C. Neilsen, October 4th, 1904, and numbered 771,441.

AND WHEREAS, the United States Horn Company of Brooklyn, N. Y., a corporation of New York is desirous of acquiring an interest in said invention and in the said letters patent

NOW. THEREFORE, I, the said Christian Krabbe, in consideration of one dollar to me in hand paid, the receipt of which is hereby acknowledged, hereby sell, assign and transfer unto said United States Horn Company and unto its successors and assigns all my right, title and interest in and to said invention, said letters patent numbered 771,441, to the full end of the term for which said letters patent is granted.

IN TESTIMONY WHEREOF, I have hereunto set my hand and seal this 24th day of February, Nineteen Hundred and Five.

CHRISTIAN KRABBE. [Seal]

Witness:

DAVID W. BOYD.

State of New York,
Borough of Brooklyn,
County of Kings,—ss.

On this 24th day of February, Nineteen Hundred and Five, personally appeared before me Christian Krabbe, to me known and known to me to be the person described in and who executed the foregoing assignment and acknowledged to me that he executed the same.

DAVID W. BOYD,
Notary Public, Kings Co. N. Y.
(No. 139)

Recorded March 1st, 1905.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cala. Pltffs. Exhibit 5. Oct. 1, '12. W. B. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 5. Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 5. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

[Plaintiff's Exhibit No. 6.]

2—391.

DEPARTMENT OF THE INTERIOR,

United States Patent Office.

To all persons to whom these presents shall come,
Greeting:

THIS IS TO CERTIFY that the annexed is a
true copy from the records of this office of an instru-
ment of writing executed by

United States Horn Company

and

Searchlight Horn Company,

January 4, 1907,

and

Recorded January 8, 1907, in Liber V-75, page 144.

Said record has been carefully compared with the
original and is a correct transcript of the whole
thereof.

IN TESTIMONY WHEREOF I have hereunto
set my hand and caused the seal of the Patent Office
to be affixed at the City of Washington, this 6th day
of July, in the year of our Lord one thousand nine
hundred and eleven and of the Independence of the
United States of America the one hundred and
thirty-sixth.

F. A. TENNANT,

Assistant Commissioner of Patents.

Liber V 75.

Page 144.

ASSIGNMENT OF PATENTS.

WHEREAS one Peter C. Nielsen did obtain

Letters Patent of the United States for an improvement in Horns for Phonographs or similar machines numbered 771,441, and dated October 4, 1904; and whereas Christian Krabbe did by purchase, witnessed by duly executed assignment from said Peter C. Nielsen to said Krabbe under date of February 2, 1905 and recorded in the Patent Office February 17, 1905, acquire the said patent and all rights under the same; and whereas William H. Locke, Jr., did by purchase, witnessed by duly executed assignment from the said Christian Krabbe to the said Locke under date of February 14, 1905 and recorded in the Patent Office February 17, 1905, acquire one undivided half of the entire right, title and interest in and to said Letters Patent; and whereas, the United States Horn Company, a corporation organized under the laws of the State of New York, did by purchase, witnessed by duly executed assignment from said Locke to said United States Horn Company under date of February 24, 1905, and recorded in the Patent Office March 1, 1905, acquire said undivided half of the entire right, title and interest in said patent; and whereas said United States Horn Company did by purchase, witnessed by duly executed assignment from said Christian Krabbe to the said United States Horn Company under date of February 24, 1905, and recorded in the Patent Office March 1, 1905, acquire the remaining undivided half of the entire right, title and interest in and to said Letters Patent, and is now the sole owner of said Letters Patent and all rights thereunder:

AND WHEREAS, said United States Horn Company, as assignee of Gustave Harman Villy, did obtain reissued Letters Patent of the United States for an improvement in Horns for Phonographs, Ear Trumpets, &c, which reissued Letters Patent are numbered 12,442 and bear date of January 30, 1906, said United States Horn Company having by purchase, acquired from said Villy all right, title and interest in and to said invention, and in and to the original Letters Patent of the United States therefor No. 739,954, dated September 29, 1903, as evidence by assignment from said Villy to said United States Horn Company dated October 4, 1905, and duly recored in the Patent Office.

AND WHEREAS, the Searchlight Horn Company, a corporaton organized under the laws of the State of New York, and having its principal office at 753 Lexington Ave., Borough of Brooklyn, City and State of New York, is desirous of acquiring the entire right, title and interest in and to said several Letters Patent and the inventions covered thereby.

NOW THEREFORE to all whom it may concern, be it known that for and in consideration of five promissory notes of which one is for One Thousand Dollars (\$1,000), one for Eight Hundred Dollars (\$800) one for Six Hundred (\$600), one for Five Hundred Dollars (\$500) and one for Two Hundred and Sixty-Six Dollars (\$266), and bearing even date with this assignment, and drawn in favor of said United States Horn Company by said Searchlight Horn Company, all of said notes being payable on demand with interest at . . .

per cent, the receipt of all of said notes being hereby acknowledged by the United States Horn Company, said United States Horn Company has sold, assigned and transferred, and by these presents does sell, assign and transfer unto the said Searchlight Horn Company the whole right, title and interest in and to the said improvement in Horns for Phonographs, and in and to Letters Patent therefor, No. 771,441 aforesaid, and in and to said improvements in Horns for Phonographs, Ear Trumpets, etc., and in and to said reissued Letters Patent therefor No. 12,442; the said several Letters Patent to be held and enjoyed by the said Searchlight Horn Company for its own use and behoof and for the use and behoof of its legal representatives, successors and assigns to the full end of the terms for which said several Letters Patent are or may be granted as fully and entirely as the same would have been held and enjoyed by the said United States Horn Company, had this assignment and sale not been made.

And the said United States Horn Company has also sold, assigned and set over, and does hereby sell, assign and set over unto said Searchlight Horn Company, its successors, assigns and legal representatives, all claims and demands, both in law and in equity, for damages and profits accrued or to accrue on account of the prior, present or future infringement of said several Letters Patent or either thereof, that the United States Horn Company has or may have.

And the said Searchlight Horn Company, for itself, its successors, assigns and legal represen-

tatives, hereby promises, covenants and agrees to bear exclusively the entire expense of instituting and maintaining all suits for past, present and future infringements of said several Letters Patent or either thereof, and to pay over to said United States Horn Company, its successors, assigns and legal representatives, without charge or deduction of any kind, one-half of all the gross damages, judgments, license fees and royalties recovered or secured by the Searchlight Horn Company from past and future infringers or from future licensees immediately upon receipt of such damages, judgments, license fees or royalties.

IN WITNESS WHEREOF, the said United States Horn Company and the Searchlight Horn Company have hereunto caused their respective corporate names to be signed by their respective presidents, and their respective corporate seals to be affixed and attested by their respective secretaries, all being done in the City and State of New York, on this fourth day of January, 1907.

[Seal] UNITED STATES HORN COMPANY,

By ALEXANDER L. WINTER,

Attest.

President,

JOHN C. DEGRAW,

Secretary.

[Seal] SEARCHLIGHT HORN COMPANY.

By WILLIAM H. HOCKE, Jr.

President.

Attest.

CHARLES PERCY BOGART,

Secretary.

Recorded January 8, 1907.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Pltffs. Exhibit 6. Oct. 1, '12, W. B. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 6. Received Aug. 19, 1913. F. D. Monckton, Clerk.

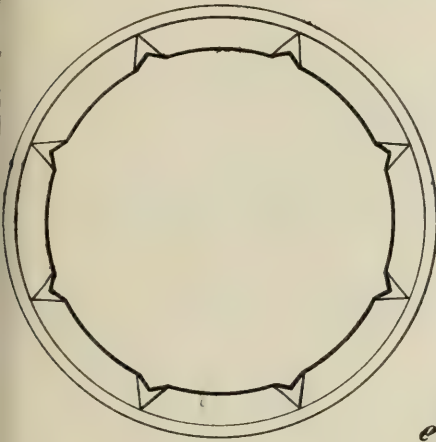
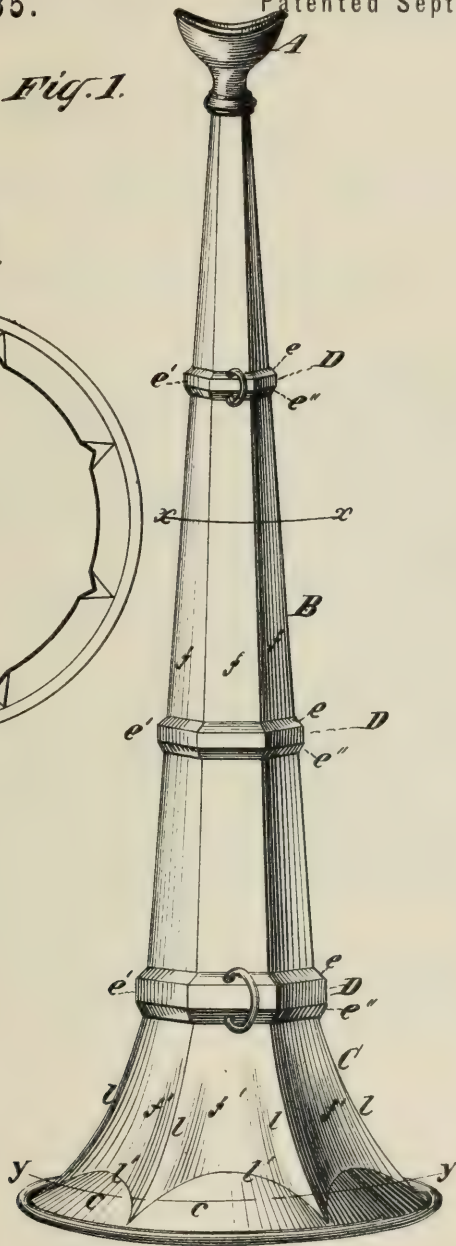
No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 6. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

DESIGN.

E. CAIRNS.
SPEAKING-TRUMPETS.

No. 10,235.

Patented Sept. 11, 1877.

*Fig. 1.**Fig. 2.**Fig. 3.*

Witnesses
John Becker
Fred. Haynes

Edward Cairns
by his Attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

EDWARD CAIRNS, OF MORRISTOWN, NEW JERSEY.

DESIGN FOR SPEAKING-TRUMPETS.

Specification forming part of Design No. **10,235**, dated September 11, 1877; application filed August 24, 1877.
[Term of Patent 7 years.]

To all whom it may concern:

Be it known that I, EDWARD CAIRNS, of Morristown, in the county of Morris and the State of New Jersey, have originated and designed a Design for Speaking-Trumpets, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing, making part of this specification.

Figure 1 in the drawing represents a perspective view of a speaking-trumpet embodying my design.

A represents the mouth-piece, B the tube, and C the bell, of the trumpet. The tube B has the form of a truncated polygonal pyramid, extending from the bell C to the mouth-piece A, and presents upon its outer surface the equal and geometrically-similar facets *f*, arranged in such manner that a cross-section made in any part of said tube at right angles with its central longitudinal axis will be a regular equilateral polygon, as shown in Fig. 2.

The bell C is, in form, partly pyramidal and partly conical. The flaring polygonal part comprises external curved facets *f'*. Said facets *f'* are extensions of the facets *f*, and their lines of junction *l* extend to and termi-

nate at the bead *b* at the outer margin of said bell. Said facets *f'* are, moreover, slightly concave on their outer surfaces, from which conformation their lines of intersection *l'* with the round flaring part *c c c* of the said bell are marked curves, giving the entire border of the flaring polygonal part where it joins the said round flaring part a scalloped form. A cross-section through the said conical and pyramidal parts of the bell gives the figure shown in Fig. 3. Upon the tube B are formed or attached at intervals polygonal bands D, having three sets of flat facets, *e e' e''*, so arranged that a cross-section of any of said bands made at right angles with any of said facets will give the figure of a trapezoid the not parallel sides of which are equal.

I claim—

The design for a speaking-trumpet consisting of the polygonally-formed tube B, the combined pyramidal and conical bell C, and the faceted bands D, as herein shown and described.

EDWD. CAIRNS.

Witnesses:

FRED. HAYNES,
BENJAMIN W. HOFFMAN.

[Endorsed]: District Court of the United States, in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Cairns Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Cairns Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

C. McVEETY & J. F. FORD.

SHIP'S VENTILATOR.

(Application filed July 10, 1901.)

FIG. 1.

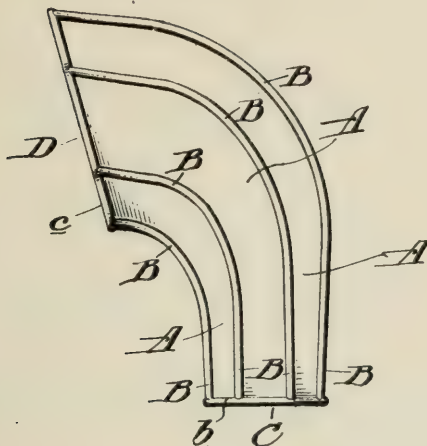


FIG. 2.

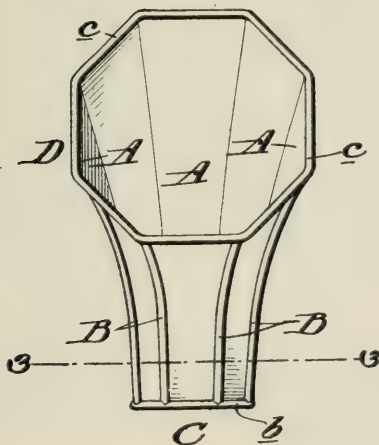
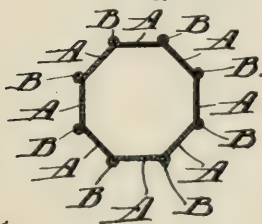


FIG. 3.



WITNESSES:

Bozeman J. Sterling
Richard H. Sharp

INVENTORS:

Charles McVeety
John F. Ford
By their attorney
Walter W. Calumore



UNITED STATES PATENT OFFICE.

CHARLES McVEETY AND JOHN F. FORD, OF PHILADELPHIA, PENNSYLVANIA.

DESIGN FOR A SHIP'S VENTILATOR.

SPECIFICATION forming part of **Design No. 34,907**, dated **August 6, 1901**.

Application filed July 10, 1901. Serial No. 67,794. Term of patent 14 years.

To all whom it may concern:

Be it known that we, CHARLES McVEETY and JOHN F. FORD, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented and produced a new and original Design for Ships' Ventilators, of which the following is a specification.

Referring to the accompanying drawings, forming part of this specification, Figure 1 illustrates a side elevation of a ventilator, showing our new design. Fig. 2 represents a front elevation of the same, and Fig. 3 shows a horizontal section taken on line 3 3 of Fig. 2.

As shown in the drawings, the leading or material feature of our design consist of a series of plates A flat in cross-section, as shown in Fig. 3. The plates have arranged at the point of junction ribs B, and at the base C and mouth D are arranged ribs b and c, which intersect the ribs B.

The general contour of the ventilator is that of a curved tapering figure in the form of a cornucopia, being octagonal in cross-section and having convex ribs at the base and mouth, and similar ribs at the intersection of the plates, forming the walls of the ventilator.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The design for a ventilator substantially as herein shown and described.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES McVEETY.
JOHN F. FORD.

Witnesses:

D. P. S. GARWOOD,
H. E. COUGHLIN.

[Endorsed]: District Court of the United States, in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co., vs. Sherman, Clay & Co. Defendant's Exhibit McVeety & Ford Design Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendants' Exhibit McVeety & Ford, Design Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

(No Model.)

C. L. HART.
SHEET METAL PIPE.

No. 409,196.

Patented Aug. 20, 1889.

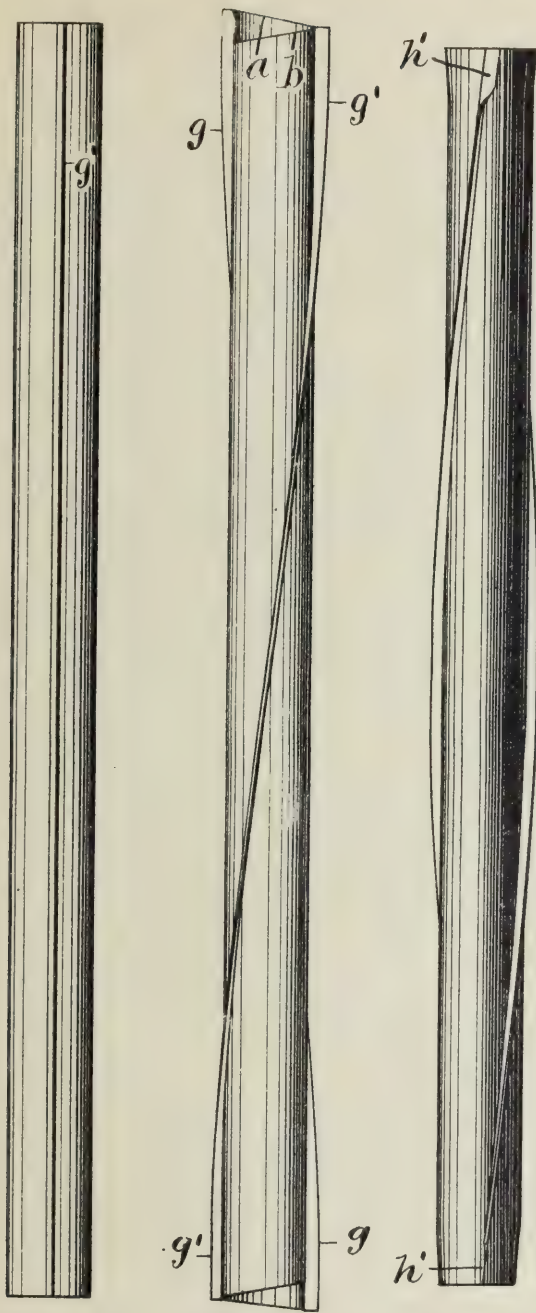


Fig. 1. Fig. 2. Fig. 3

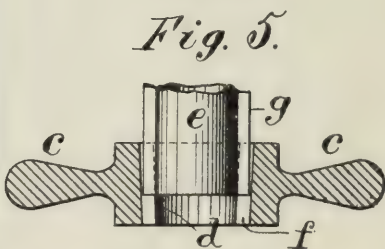
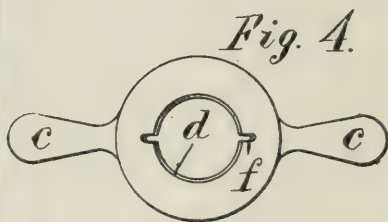
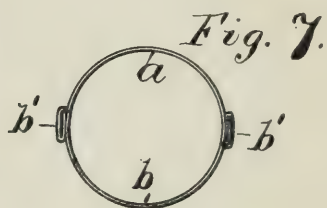
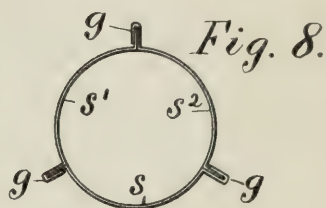
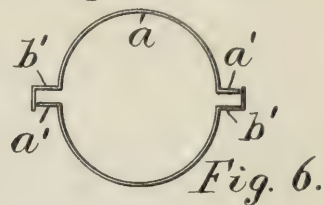


Fig. 5.

Attest:

L. Lee.
F. C. Fischer

Inventor.

Charles L. Hart, per
Crane & Miller, Atty.

CHARLES L. HART, OF BROOKLYN, NEW YORK.

SHEET-METAL PIPE.

SPECIFICATION forming part of Letters Patent No. 409,196, dated August 20, 1889.

Application filed December 19, 1888. Serial No. 294,134. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. HART, a citizen of the United States, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Sheet-Metal Pipes, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention consists in a sheet-metal pipe formed in two or more longitudinal sections united by longitudinal twisted seams.

It also consists in certain modifications hereinafter fully set forth. When formed with standing spiral seams, the appearance of the pipe is not only novel and ornamental, but the standing spiral seams operate to brace and stiffen the pipe in a very remarkable degree.

In all the pipes heretofore manufactured with spiral seams the pipe has been constructed with a single spiral seam and formed by wrapping a blank transversely to the axis of the pipe and securing one edge of the blank upon the opposite edge of the same blank when lapped spirally thereon. Such a process may be continued indefinitely to form an endless pipe; but to form a pipe in such manner requires special machinery adapted to wind the blank and secure its overlapped edges together, and the object of my present invention is to avoid the expense of such special machinery in forming a pipe with a spiral seam. I effect such object by first forming the pipe of straight longitudinal sections of convenient length united by longitudinal seams and then twisting the whole when seamed together.

The straight longitudinal sections which are required to form a pipe with straight longitudinal seams may be readily shaped without expensive dies in the ordinary cornice-brake found in the shops of all large workers in sheet metal, and they may also be formed in suitable stamping or shaping presses by providing dies of suitable profile and pressing the sheet-metal blanks between them. The pipe may thus be made and seamed longitudinally with very little expense, and may then be twisted bodily to form the twisted seam thereon by merely grasping the two ends of the pipe and turning them in opposite directions.

The invention will be fully understood by reference to the annexed drawings, in which— 55

Figure 1 is a view of a pipe provided with straight longitudinal seams prior to the twisting operation, the view showing the edge of the standing seam *g*. Fig. 2 is a side view of the same pipe with standing seam *g* spirally twisted one-half a revolution in the length of the pipe. Fig. 3 is an edge view of the same pipe with one end of the pipe tapered and a portion of the standing seam removed and the other end flared and the standing seam flattened down. Fig. 4 is an end view of a die adapted to twist such pipe. Fig. 5 is a longitudinal section across the center of the same with one end *e* of the pipe fitted therein. Fig. 6 is an end view of the two sections of a pipe shaped ready for seaming. Fig. 7 is an end view of the same pipe with the seam closed and bent down upon the pipe, and Fig. 8 is an end view of a pipe formed in three longitudinal sections with three standing seams. Figs. 6, 7, and 8 are drawn upon a larger scale than the other figures. 65 70 75

In Fig. 6 the sections of the pipe are shaped each to embrace one-half its circumference, the sections *a* and *b* being provided each with a longitudinal radial flange *a'* at one edge and with a bent flange *b'* at the opposite edge. The sections are thus similar, and any number of similar sections may thus be used in forming the pipe. 85

Fig. 7 shows the sections united together with the flange *b'* closed over the flange *a* and both bent down over the pipe, as in double seaming.

In Fig. 8 the pipe is shown formed in three longitudinal sections *s*, *s'*, and *s''*, united by similar seams, but the seams *g* projecting radially from the pipe. 90

In Figs. 4 and 5 the die is shown provided with handles *c* and formed with a conical bore *d*, adapted to partially admit the end of the pipe *e*. Longitudinal grooves *f* are formed in the sides of the bore to admit the standing seams *g*. The pipe is made in the following manner: 95 100

Sheet-metal section-blanks of suitable length and width are prepared to form the required sections for one length of pipe, and each is shaped at its edges to form a seam in conjunction with the edges of the adjacent sections. The longitudinal seams are then 105

closed sufficiently to hold the sections together during the twisting operation, and the seams are, after the pipe is twisted, permanently closed to hold the sections in their twisted position.

It will be readily perceived by comparing Figs. 1 and 2 that the spiral seam in Fig. 2 is necessarily longer upon the same pipe than the straight seam in Fig. 1, and it will therefore be obvious that in the twisting operation one or more of the flanges a' must slide longitudinally upon certain of the flanges b' an amount corresponding to the difference in the length of the straight and spiral seams, and that the end of each section will assume an angle with the axis of the pipe, owing to the twisting of each section-blank around such axis. All the seams are not therefore rigidly closed prior to the twisting operation, as such closing would cause a great resistance to such sliding movement of the flanges, but part only of the seams, as the seam g' in Fig. 2, are closed rigidly before the pipe is twisted to hold the sections firmly in their twisted position.

It will be noticed in Fig. 2 that the ends of the blanks a and b coincide upon the closed seam g' , thus forcing the sliding of the flanges to occur upon the seam g , at the ends of which the displacement is obvious. It will also be understood that the metal in the flanges a' and b' is materially changed in form during the twisting operation, and receives a permanent set to such form before and during the final closing of the seams. It is well known that longitudinal blanks bent in the form shown in Fig. 6 are in practice, when formed, more or less warped or buckled, so that the flanges a' and b' upon the opposite edges of the section a or b would not lie in the same flat plane. The seaming of the sections together brings the flanges a' and b' into contact without materially affecting the tendency of the sections to warp or buckle, and a perfectly straight pipe is not therefore produced by the mere joining of the seams. I have, however, discovered that the twisting operation serves to remove all the buckle from the pipe and to make it exceedingly straight, while the "set" imparted to the respective sections and the seams formed upon their edges serve to hold the pipe permanently in such straight condition. By retaining the seams in a radial position upon the finished pipe at the close of the final seaming operation, as shown in Figs. 2, 3, and 8, the standing seam greatly re-enforces the pipe in every direction and imparts to it an unusual degree of strength and rigidity.

It will be understood by reference to Fig. 1 that the edges of the sections a and b in the untwisted pipe are parallel with the axis of the cylinder or pipe which they form, the curvature of the metal being transverse at the edges to such axis, while an inspection of Fig. 3 will show that the twisting operation entirely changes the cylindrical curva-

ture of the metal, so that the line of the curvature is not parallel with the edges of the sections, but at an angle thereto equal to the arc through which the pipe is twisted.

The spiral seam formed upon the pipe in my invention is a much longer and more gradual spiral than could be formed by spirally winding a single blank and securing its overlapped edges, and my construction is readily distinguished from any pipe having a single spiral seam instead of two or more, as in my invention.

The blanks for the sections may be formed with oblique ends, so that when the pipe is twisted its ends will be at right angles to its axis. When the standing seam is used, the pipe-lengths may be readily fitted together by flattening down or removing a portion of the seam at each end and fitting the ends to enter one into the other, as is common with sheet-metal pipes, and shown upon the pipe in Fig. 3 at h and h' .

It is immaterial how the pipes are twisted after seaming or how the seams are finally locked to hold the sections in their twisted position, and no means for locking the seams is therefore shown herein.

Having thus set forth my invention, what I claim is—

1. As a new article of manufacture, a sheet-metal pipe formed in two or more longitudinal sections and having twisted seams at the joints of the sections, substantially as herein set forth.

2. As a new article of manufacture, sheet-metal pipes in uniform lengths formed in two or more longitudinal sections and having twisted seams at the joints of the sections, substantially as herein set forth.

3. As a new article of manufacture, a sheet-metal pipe formed in two or more longitudinal sections and having twisted standing seams at the joints of the sections, substantially as herein set forth.

4. As a new article of manufacture, a sheet-metal pipe formed in two or more longitudinal sections and having twisted standing seams at the joints of the sections, with the projection of the seam removed at the ends of the pipe and the ends longitudinally flared and tapered to join the same in series, substantially as herein set forth.

5. As a new article of manufacture, a sheet-metal pipe formed in two or more longitudinal sections united by longitudinal standing seams and having the sections and seams twisted and held in a twisted condition by the locking of the seams, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses

CHARLES L. HART.

Witnesses:

ANSON O. KITREDGE,
HENRY COLWELL.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit G. Oct. 2, '12. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit G. Received Aug. 19, 1913. F. D. Monckton, Clerk.

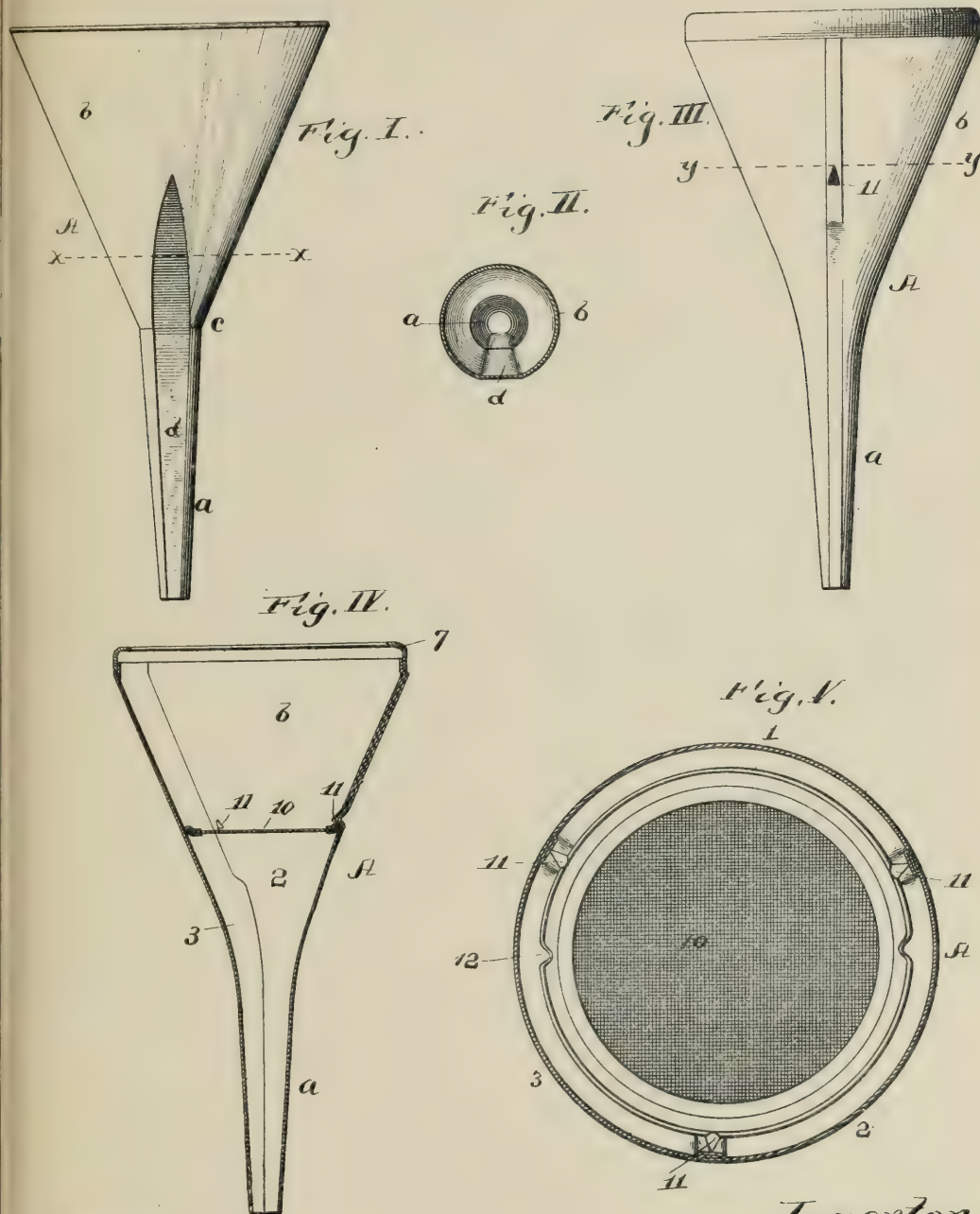
No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit G. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

(No Model.)

A. GERSDORFF.
FUNNEL.

No. 453,798.

Patented June 9, 1891.



Witnesses:
J. B. McGirr.
Wm. O. Belt.

Inventor:
Augustus Gersdorff.
By Edwin B. Peck,
his attorney.

AUGUSTUS GERSDORFF, OF BRIDGETON, NEW JERSEY.

FUNNEL.

SPECIFICATION forming part of Letters Patent No. 453,798, dated June 9, 1891.

Application filed June 23, 1890. Serial No. 356,435. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS GERSDORFF, a citizen of the United States, residing at Bridgeton, in the county of Cumberland and State of New Jersey, have invented certain new and useful Improvements in Funnels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improved funnel of that class in which vents are provided in the nozzle for the escape of air while liquids are being poured through the funnel into a vessel.

My invention consists in the combination of a funnel having seats or lugs arranged interiorly within the body thereof and a removable strainer seated within said funnel and having a spring-flange bearing upon the interior seats or lugs, which operate to hold the strainer against displacement, all as will be hereinafter more fully described and claimed.

To enable others to more readily understand my invention, I will now proceed to a detailed description of the same in connection with the accompanying drawings, in which—

Figure I is an elevation of the funnel embodying my invention. Fig. II is a transverse sectional view through the body of the funnel above the joint between the nozzle and body on the plane indicated by the dotted line *x x* of Fig. I. Fig. III is an elevation of my preferred form of funnel having the body and nozzle made of longitudinal sections. Fig. IV is a vertical sectional view through the funnel shown in Fig. III, and Fig. V is a transverse section on the line *y y* of Fig. III.

Like letters and numerals of reference denote corresponding parts in all the figures of the drawings.

A designates my improved funnel, which comprises the tapered body *b* and the nozzle *a*. The body and nozzle may be made of separate pieces and connected together by the joint *c* in the ordinary manner; but as a better and cheaper manner of making the funnel I prefer to construct it in longitudinal sections 1 2 3, which may consist of two, three, or more, each section forming a part of the body and nozzle of the funnel.

The device constructed as shown in Figs. I and II has its round nozzle flattened on one side to form a vent *d*, which vent extends longitudinally of the nozzle and into the body *b* to a point about or above midway of the length of said body, which is advantageous, as it provides for the escape of air should the funnel be placed in a vessel having a mouth of greater diameter than the cross-sectional area of the nozzle.

The preferred form of the funnel shown in Figs. III and IV has its nozzle provided with a plurality of flat sides and forming a series of vents, and the nozzle in the cross-section preferably has the form of a triangle, as shown and described in a prior patent issued to me February 8, 1887, and numbered 357,476.

These sections 1 2 3 of the funnel extend from the top of the body to the lower end of the nozzle, each section forming a part of the body and nozzle. The parts of the section which form the body of the nozzle are each made segmental in cross-section, and the lower parts of said section that form part of the nozzle are flattened. The sections are united together along their side edges through the body of the funnel by bending the same to form flanges and interlocking and soldering the flanges together, thus forming longitudinal seams; but in the nozzle the sections are united by soldering, instead of interlocking the flanges, thus forming continuous smooth seams. The segmental portions of the sections form the body, which is circular in cross-section, and the flattened lower portions of said sections form the triangular nozzle, as shown. The upper end of the funnel is finished and the ends of the joints between the side sections 1 2 3 concealed by an annulus or ring 7, which is bent or curved to extend inward a short distance.

In connection with my improved funnel I employ a strainer 10, which is adapted to be fitted within the body of the funnel and to be held therein by means of lugs 11, formed interiorly within the funnel. In order to provide lugs which shall be sufficiently strong and not easily broken and without weakening the funnel, I stamp or press the lugs through the locked seams which unite the sections of the funnel, and these lugs are preferably tapered and have their lower ends made broad to pro-

vide a bearing surface against which the screen impinges or bears. To permit the screen to be readily adjusted or fitted within the funnel below the lugs and to remove the screen when desired, I form recesses 12 (one, two, or more) in the edge of the screen by indenting or forcing the edge inwardly. The screen can be readily sprung or forced into position within the body of the funnel and below the lugs therein, which lugs operate to firmly secure the same in place; but to remove the screen from the funnel it must be turned so that one of the lugs enters one of the recesses, after which the screen will readily drop out of the funnel when it is inverted, or it can be removed by hand.

A funnel constructed as contemplated by my present invention can be readily and easily cleaned, as the absence of the joint between the body and nozzle of the funnel provides a smooth surface, which facilitates the cleaning of the funnel.

Changes in the form and proportion of parts can be made without departing from the spirit or sacrificing the advantages of my invention, and I would therefore have it understood that I reserve the right to make such modifications as fall within the scope of my invention.

No claim is herein made to the funnel made of longitudinal sections, each section forming a part of the body and nozzle of the funnel and extending from the point of the nozzle to the top of the body, the sections being joined together by longitudinal seams, nor to the nozzle formed with the flattened side or sides, as these features form the subject-matter of a separate application filed by me on the 19th day of March, 1888, Serial No. 267,645.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with the funnel having within the interior of its body the inwardly-projecting lugs, a strainer having a spring-flange, which is adapted to pass downward over and be locked in place by said lugs, substantially as described.

2. In combination with the funnel provided with the inwardly-projecting locking-lugs, and the strainer having a spring-flange, which is thus adapted to pass downward over and to be locked in place by said lugs, and is provided within its edge with notches that when caused to coincide with said lugs will operate to release said strainer and permit of its removal, substantially as herein shown and described.

3. The combination of a funnel provided with the retaining-lugs, which are arranged interiorly within the body of the same, and which lugs are stamped or pressed from the seams which unite the sections of the funnel together, and a strainer provided with a spring-flange, which is adapted to pass downward over and be locked in place by the said lugs, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

AUGUSTUS GERSDORFF.

Witnesses:

JAMES J. REEVES,
HUGH L. REEVES.

[Endorsed]: District Court of the United States in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Gersdorf Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit, Gersdorf Patent. Filed Apr. 8, 1916. F. D. Monekton, Clerk.

A. GERSDORFF.
FUNNEL.

No. 491,421.

Patented Feb. 7, 1893.

Fig. 1.

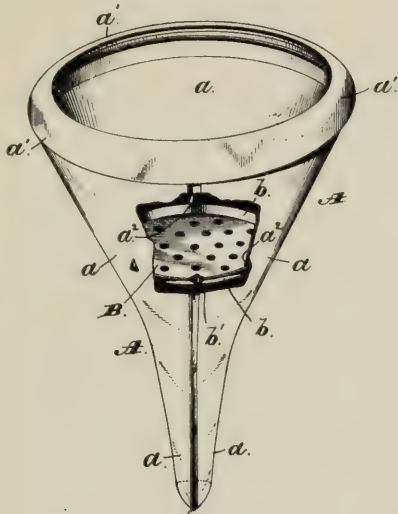


Fig. 2.

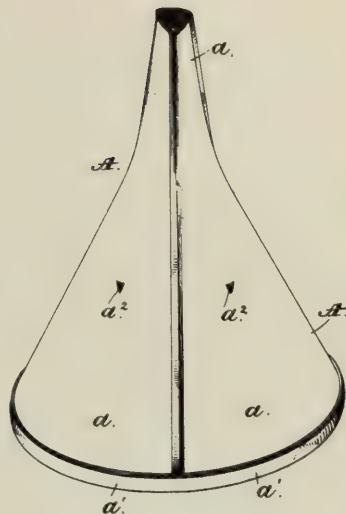


Fig. 4.

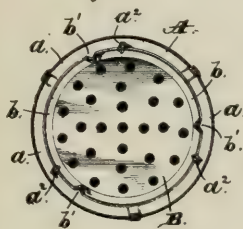


Fig. 5.

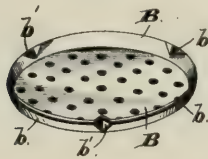


Fig. 5.

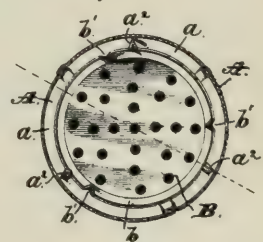
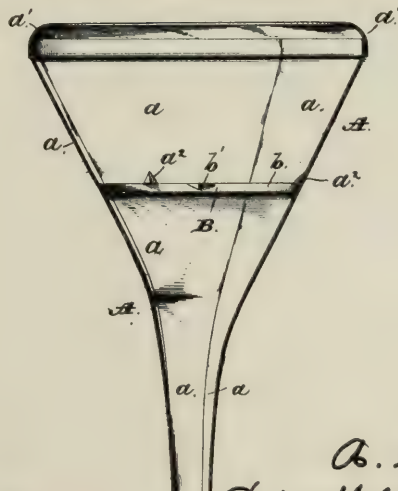


Fig. 6.



Witnesses:
Jas E Hutchinson.
Henry C. Hazard

Inventor.
A. Gersdorff, by
Erindell & Russell, his Attys

UNITED STATES PATENT OFFICE.

99

AUGUSTUS GERSDORFF, OF WASHINGTON, DISTRICT OF COLUMBIA.

FUNNEL.

SPECIFICATION forming part of Letters Patent No. 491,421, dated February 7, 1893.

Application filed March 19, 1888. Serial No. 267,645. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS GERSDORFF, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Funnels; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my improved funnel, from the upper end, a portion of the side being broken away to show the strainer; Fig. 2 is a like view of the same from the lower end. Fig. 3 is a perspective view of the strainer separated from the funnel. Fig. 4 is a horizontal section of the funnel at the point where the strainer is located and shows the latter in position for engagement with the locking lugs; Fig. 5 is a like view of the same after said strainer is so engaged, and, Fig. 6 is a central longitudinal section of the funnel.

Letters of like name and kind refer to like parts in each of the figures.

My invention is an improvement upon a funnel for which Letters Patent No. 357,476 were issued to me upon the 8th day of February, 1887, and it consists, principally, in the construction of the funnel, substantially as and for the purpose hereinafter specified.

In the construction of funnels it has heretofore been customary to form the body and nozzle separately and then join them together, but such construction has proved defective in consequence of the frequent separation of said parts.

My funnel A is formed from two or more—preferably three—sections *a* and *a'* which are united upon longitudinal lines so that each section extends from the upper end to the lower end of the funnel and constitutes a part of the body and a part of the nozzle of the same, as shown. The joints or seams are all lengthwise of the funnel, and in the direction of the greatest strain—transversely—said funnel presents only solid metal which is strengthened by its curved form and by said seams, and is capable of resisting successfully a much greater force than would ever be exerted by any proper use.

In the practical use of funnels, it frequently happens that the funnel is placed in a vessel having a mouth of larger diameter than the

cross sectional area of the nozzle of the funnel, so that the nozzle depends wholly within the mouth of the vessel and the lower portion of the body of the funnel rests upon the vessel, in which event the funnel prevents the free escape of air displaced in the vessel by pouring a liquid therein.

One of the aims of my present invention is to improve the funnel to avoid the foregoing objection, which is accomplished by providing the nozzle with one or more flattened longitudinal faces to form the vent or vents, and extending the vent or vents into the body of the funnel for a suitable distance and above the joint or line between the body and nozzle of the funnel, whereby air can freely escape through the vent on the outside of the funnel if it is placed on a vessel so that its body is in contact with the mouth of said vessel.

As hereinbefore stated, the funnel is made wholly of longitudinal sections which extend from the top of the body of the funnel to the lower end of the nozzle. The parts of the sections which form the body of the funnel are each made segmental in cross section, and the lower parts of said sections which form the nozzle are flattened. The sections are united together along their side edges through the body of the funnel by bending the same to form flanges and by interlocking and soldering the flanges together, thus forming the longitudinal seams; but in the nozzle, the sections are united by soldering instead of interlocking the flanges, thus forming smooth seams in the nozzle. The segmental portions at the upper ends of the sections form the body of the funnel which body is circular in cross section; and the flattened lower portions of said sections form the nozzle which is triangular in cross section, as shown in the drawings.

A funnel constructed as contemplated by my invention can be readily and easily cleaned, as the absence of the joint between the body and nozzle of the funnel provides a smooth surface on the interior of the funnel, which facilitates the cleaning of the funnel.

The upper end of the funnel has an upward and inward curve and is formed by means of a solid ring *a'* of sheet metal which is given the necessary shape by dies and has such size as to enable its lower edge to pass over and

engage with the upper edges of the sections a and a , where it is secured in place by solder and operates to thoroughly strengthen said parts and prevent their separation at such point.

Within the body of the funnel is a strainer B which is constructed from sheet metal and its central portion perforated, and around its edge is provided with a flange b that extends upward and outward at substantially the same angle as the adjacent sides of the funnel. Said strainer bears fairly upon the converging sides of said funnel and is thereby prevented from passing below a certain point and is locked in such position by means of two or more lugs a^1 and a^2 which project inward from the sides of the funnel and engage with the upper edge of the flange b . The lugs a^2 and a^2 have downwardly and inwardly inclining faces and the strainer B is placed in position by inserting one edge beneath the lug or lugs at one side of the funnel and then pressing the opposite side of said strainer downward until its flange has sprung inward sufficiently to enable it to pass the lug or lugs at such point.

In order that the strainer may be removed from the funnel, when desired, its flange b is provided with notches b' and b' which correspond in size and number to the like features of the lugs a^2 and a^2 , and have such relative arrangement that by a partial rotation of said strainer, said notches may be caused to coincide with said lugs and thus release said strainer. The same result will be secured however, if but one notch is provided, as by causing such notch to coincide with one of the lugs; the side of the strainer in which said notch is located will be released and can be raised so as to withdraw the opposite side from engagement with its locking lugs.

No claim is herein made to the combination of the funnel having the lugs arranged interiorly within the body thereof, and the strainer provided with the spring flange which is thus adapted to pass downward beneath the lugs and to be held or locked in place by the same, as said devices form the subject matter of a separate application filed by me on the 23d day of June, 1890, Serial No. 356,435.

Having thus described my invention what I claim is—

1. As a new article of manufacture, a funnel made of longitudinal sections united together by longitudinal seams and each section forming a part of the body and nozzle of the funnel, the nozzle having flattened sides which form air vents that extend longitudinally of the nozzle, into the body, and above the line where said nozzle joins the body, substantially as described.

2. As a new article of manufacture, a funnel made of longitudinal sections united together by longitudinal seams and each section forming a part of the body and nozzle of the funnel, the nozzle having flattened sides which form air vents that extend longitudinally of the nozzle, into the body, above the line where the nozzle joins the body, the seams of the body being formed by interlocking and soldering flanges and the seams in the nozzle being soldered together, whereby the inner surface of the body and nozzle is made smooth, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of March, 1888.

AUGUSTUS GERSDORFF.

Witnesses:

JAS. E. HUTCHINSON,
GEO. S. PRINDLE.

(No Model.)

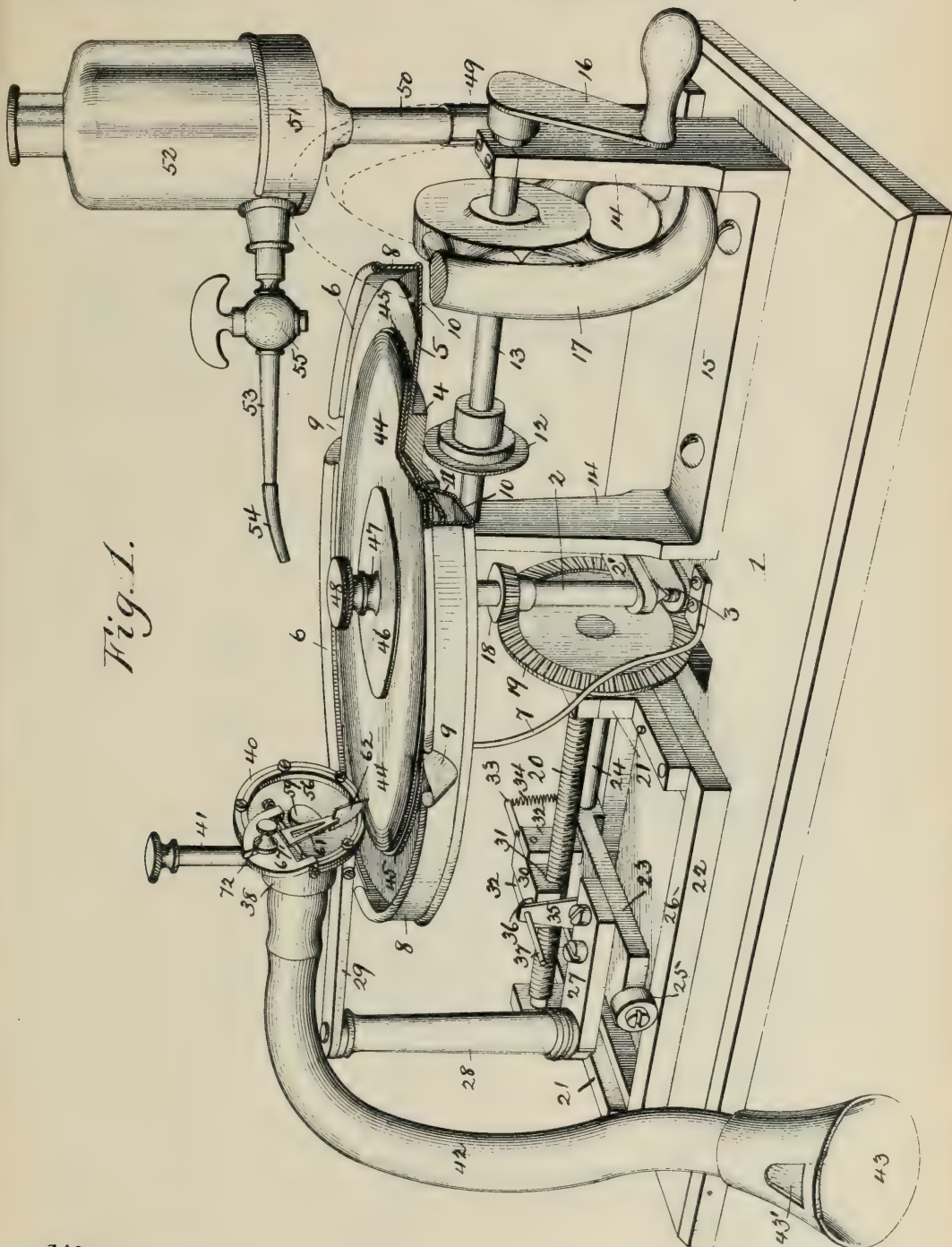
4 Sheets—Sheet 1.

E. BERLINER.
GRAMOPHONE.

No. 534,543.

Patented Feb. 19, 1895.

Fig. 1.



Witnesses;
Rex C. Bowen,
F. T. Chapman.

Inventor;
Emile Berliner,
By Joseph Lyons.

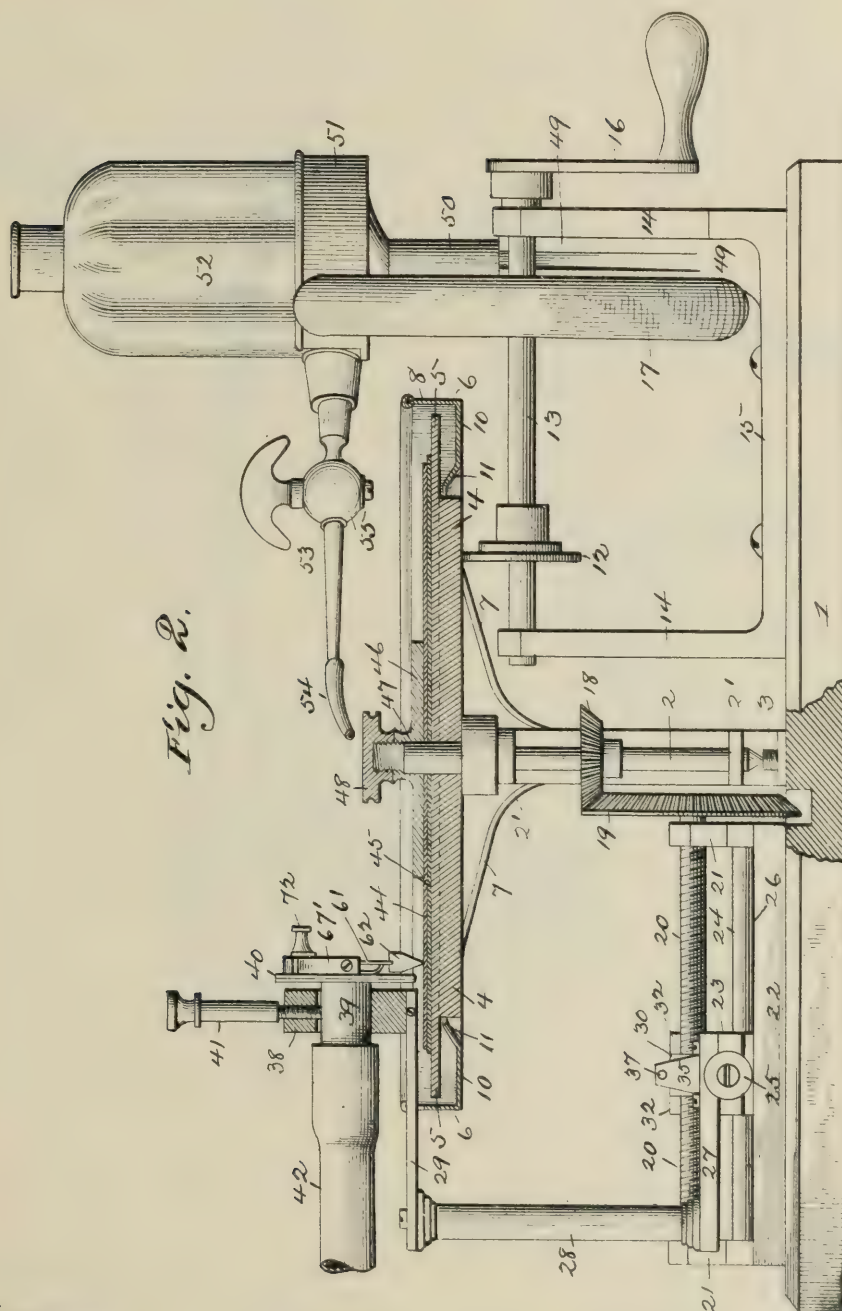
(No Model.)

4 Sheets—Sheet 2.

E. BERLINER.
GRAMOPHONE.

No. 534,543.

Patented Feb. 19, 1895.



Witnesses:

J. B. McGirr.
F. J. ChapmanInventor,
Emile Berliner,
By Joseph Lyons.

(No Model.)

4 Sheets—Sheet 3.

E. BERLINER.
GRAMOPHONE.

No. 534,543.

Patented Feb. 19, 1895.

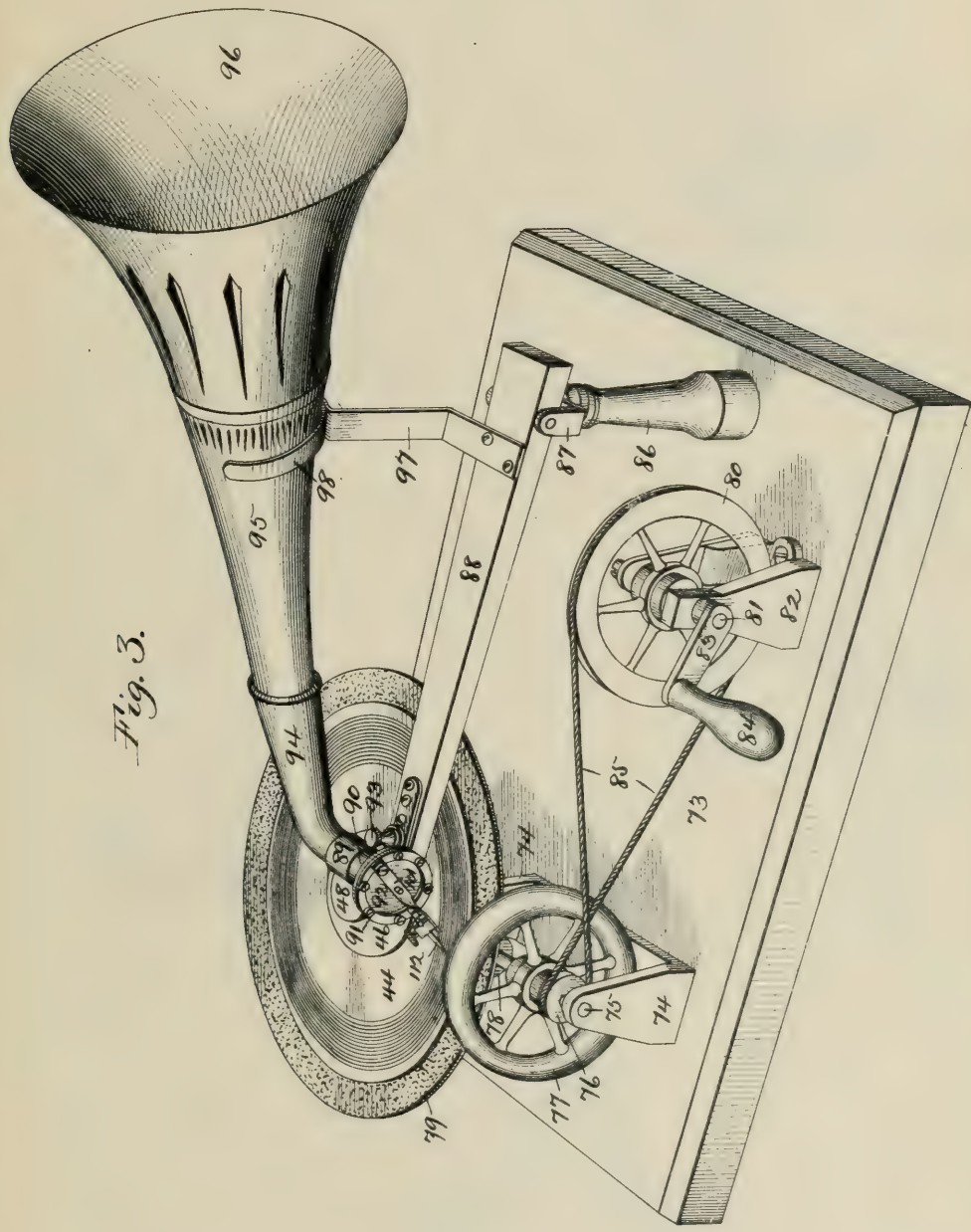


Fig. 3.

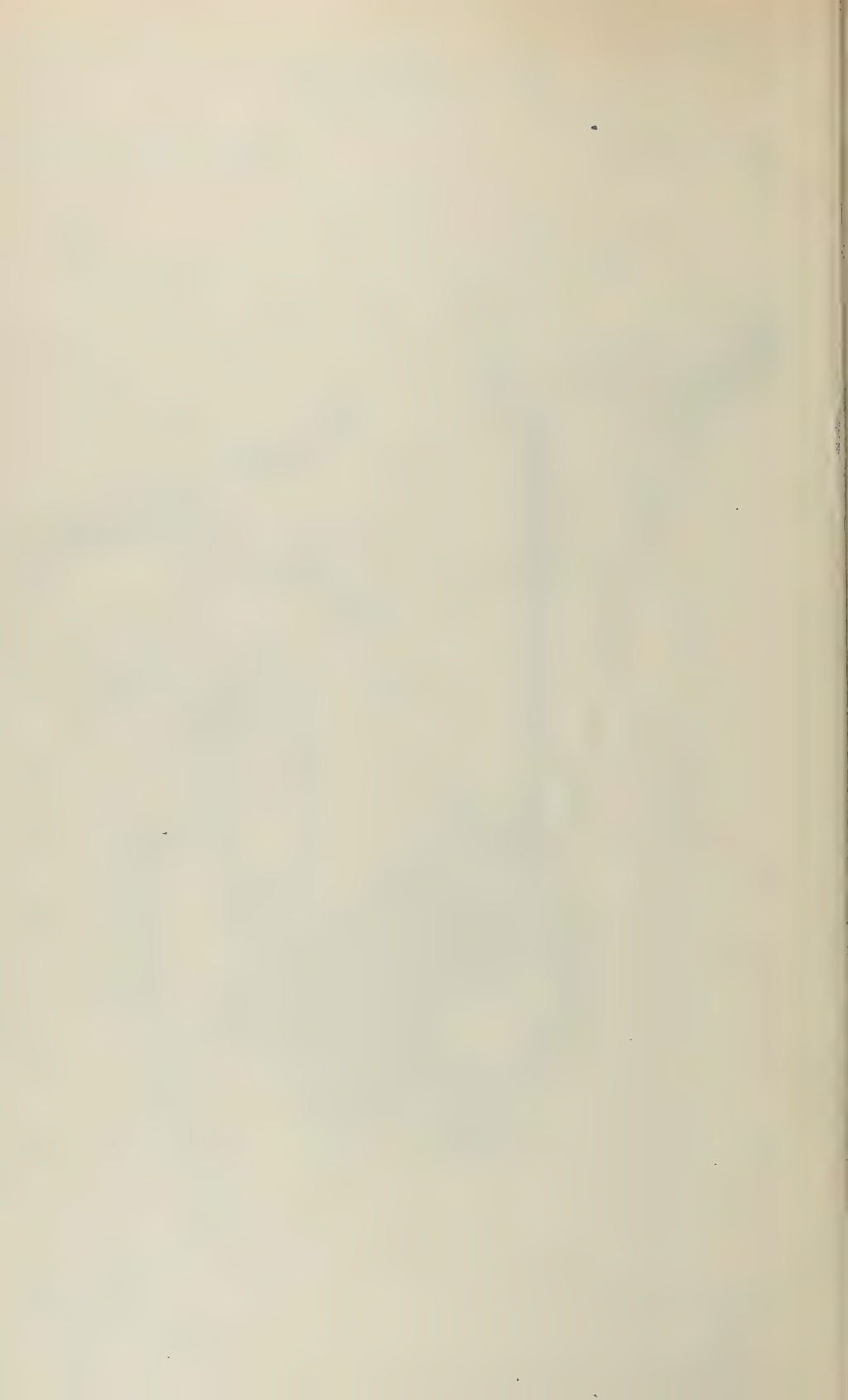
Witnesses;

Percy C. Bowen.
H. T. Chapman.

Inventor;

Emile Berliner,

By *Joseph Lyons.*
Attorney.



E. BERLINER. GRAMOPHONE.

No. 534,543.

Patented Feb. 19, 1895.

Fig. 4.

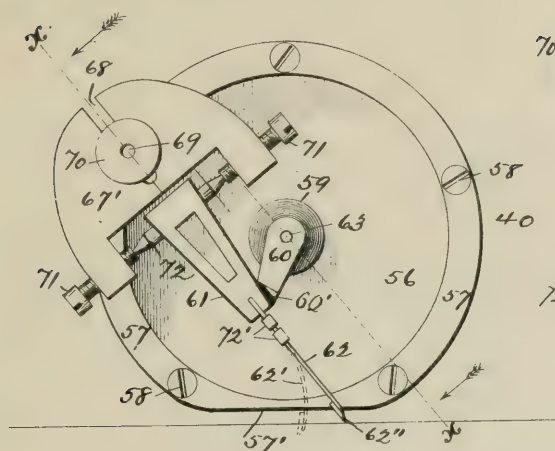


Fig. 5.

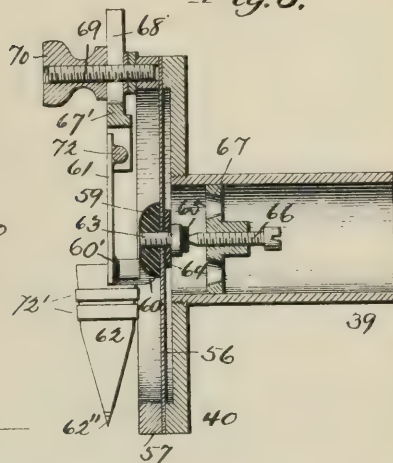


Fig. 6.

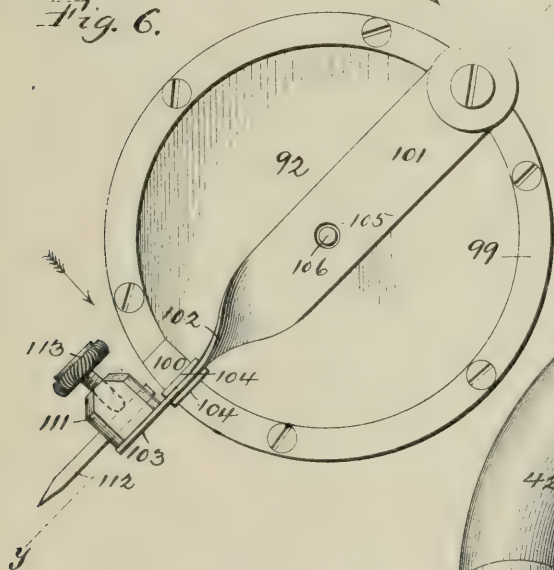


Fig. 7.

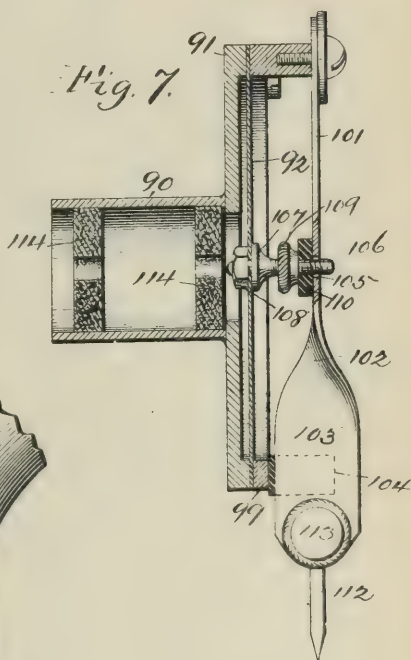
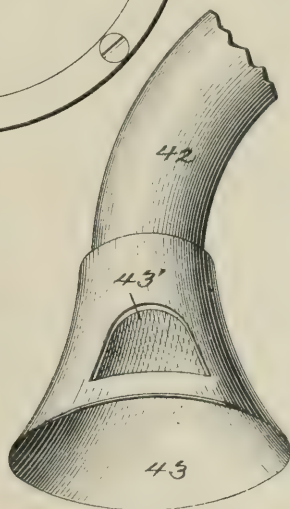


Fig. 8.



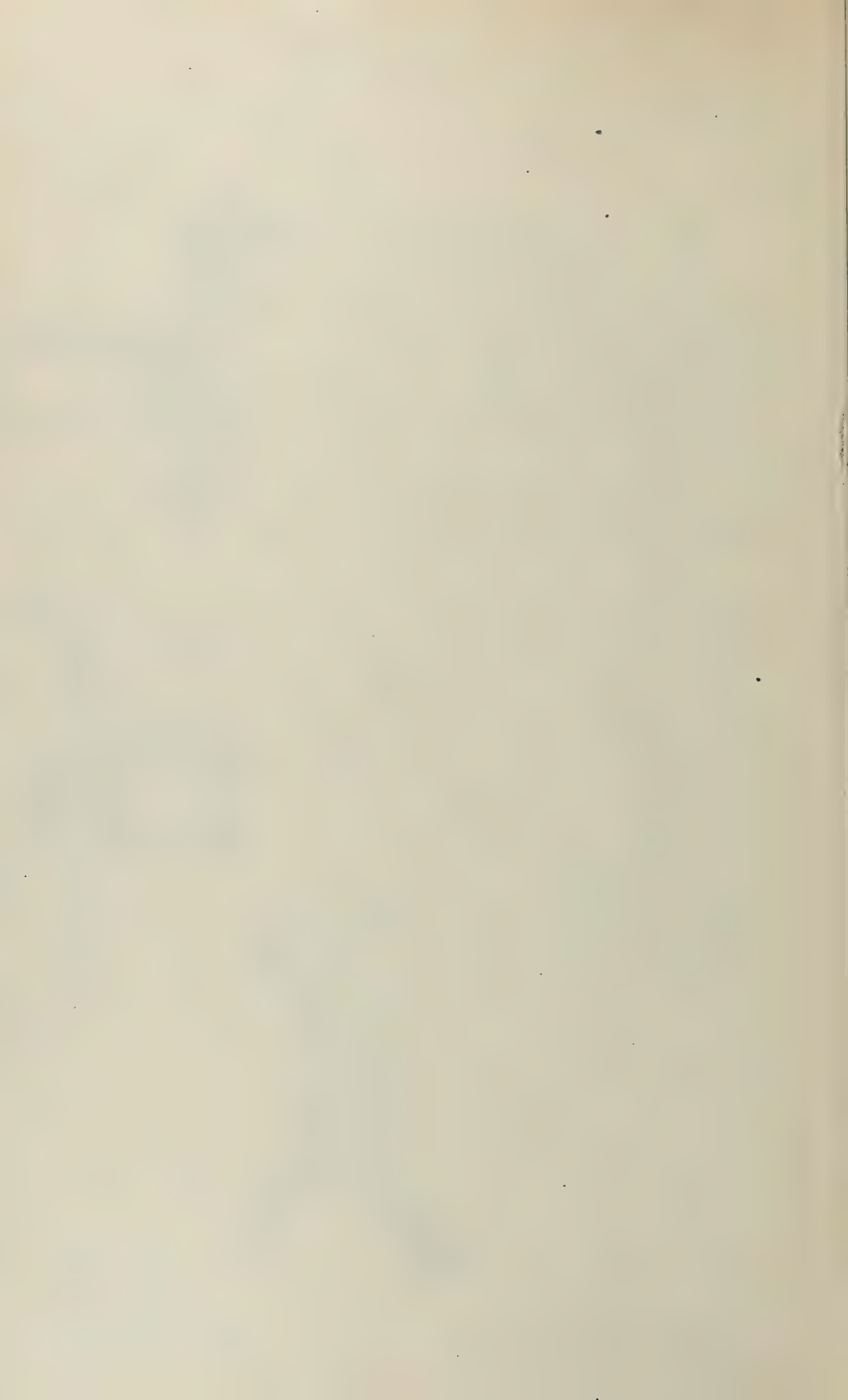
Witnesses:

Percy C. Bowen.
J. T. Chapman

Inventor:

Emile Berliner,

By Joseph L. G. ...
Attorney.



UNITED STATES PATENT OFFICE.

EMILE BERLINER, OF WASHINGTON, DISTRICT OF COLUMBIA, ASSIGNOR
TO THE UNITED STATES GRAMOPHONE COMPANY, OF SAME PLACE.

GRAMOPHONE.

SPECIFICATION forming part of Letters Patent No. 534,543, dated February 19, 1895.

Application filed March 30, 1892. Serial No. 427,080. (No model.)

To all whom it may concern:

Be it known that I, EMILE BERLINER, a citizen of the United States, and a resident of Washington, District of Columbia, have invented certain new and useful Improvements in Gramophones, of which the following is a specification.

My invention has reference to improvements in the method of and apparatus for recording and reproducing sounds, the improvements being more particularly directed to the construction of that kind of sound recording and reproducing apparatus which I have called "gramophone," and for which Letters Patent of the United States No. 382,790, dated May 15, 1888, have been granted to me.

One feature of my invention has reference to improvements in the method of recording sound by tracing upon a fatty film deposited upon a metallic surface, undulatory lines, corresponding to sound waves, and then etching such lines in the metal base, or as it is now commonly called, the record tablet; while the other features of my invention have reference to the construction of the details of both the recorder and the reproducer of the gramophone. Each of these features of improvement are designed to overcome certain difficulties, and to avoid certain imperfections heretofore met with in the operation of the gramophone. These difficulties and imperfections, and the manner in which they are avoided, will be particularly pointed out in the following detailed description with reference to the accompanying drawings, in which—

Figure 1, is a perspective view of my improved gramophone recorder. Fig. 2 is a side elevation, partly in section, of the recorder. Fig. 3 is a perspective view of a gramophone reproducer. Fig. 4, is an elevation of a recording diaphragm and stylus. Fig. 5, is a section of the same on the line $x-x$ of Fig. 4. Fig. 6, is an elevation of the gramophone reproducing diaphragm and stylus. Fig. 7, is a section of the same on the line $y-y$ of Fig. 6, and Fig. 8, is a perspective view of an improved mouth-piece for the recorder.

Like numerals of reference indicate like parts throughout the drawings.

My improved gramophone recorder is shown

as a whole in Figs. 1 and 2, mounted upon a suitable base 1. About midway of the length of this base there is an upright shaft 2, journaled in brackets 2', 2', stepped at its lower end in a suitable bearing 3. This shaft carries at its upper end a circular disk 4, the outer or peripheral portion of which is reduced in thickness as shown at 5, and this reduced portion extends over a ring shaped pan 6, supported by stays or brackets 7, from which it may be lifted and removed, when required. The outer edge or wall 8, of the pan is of sufficient height to project for a distance above the disk 4, and is provided with pouring lips 9, for a purpose hereinafter described. The bottom 10 of the pan extends under the reduced portion 5, of the disk 4, and its inner edge 11, is upturned close to the under side of the reduced portion of the disk, as shown.

Bearing against the under side of the disk 4, is a friction wheel 12, secured to a horizontal shaft 13, which latter is journaled in the upper ends of posts or uprights 14 constituting the ends of a frame, the base 15, of which is secured to the base 1 of the apparatus. The position of shaft 13, and the diameter of the friction wheel 12, are such, that a portion of the weight of the disk 4, and of its shaft 2, is supported by the friction wheel; whereby the bearing 3, is relieved from a portion of that weight, and whereby frictional gearing between the disk 4 and wheel 12 is insured, without requiring special adjustment. The shaft 13, carries at its outer end a crank 16, by means of which it is rotated, and between the two uprights 14, there is secured to the shaft a heavy fly or balance wheel 17. Secured to the upright shaft 2, below the disk 4, there is a beveled pinion 18, meshing with a large bevel gear 19, on one end of a horizontal screw-threaded shaft 20, which is arranged radial to the disk 4, and journaled adjacent to the said gear 19, and also at the other end, in pillow-blocks 21, supported on the end piece of a rectangular frame 22, which in turn is fast on the base 1. Mounted upon the frame 22, so as to be movable thereon in the direction of the length of the shaft 20, there is a carriage 23, supported at one end by a guide rod 24, on which it is free to slide, and at the other end by a roller 25, movable

1000
along the upper surface 20, of one of the side
pieces of the frame 22. The carriage 23, has
firmly secured to it a projecting arm 27, on
the outer end of which is an upright post 28,
carrying at its upper end an arm 29, parallel
with the arm 27, and of such length as to
overhang the disk 4, when the carriage is
moved to the right, as represented in the
drawings; the construction being such, that
when the carriage 23 is moved in the manner
to be described, the arm 29, will be carried
radially over the disk 4, and any object carried
thereby will participate in said movement.

The carriage 23, is moved in one direction
by means of the screw-threaded shaft 20, and
in order to effect this operation, there is pro-
vided a block 30, in one side of which, near
one end, is formed a half nut 31, constructed
to engage the threads on the shaft 20; and
this block 30, is pivotally supported between
ears 32, erected on the carriage 23. Project-
ing from the other end of the block 30, there
is a pin 33, to which one end of a spring 34,
is attached, the other end of said spring being
secured to the carriage 23, and the tendency
of the spring is to maintain the block 30, in
a tilted position with the nut portion raised
out of engagement with the shaft 20. In
order to lock the block 30, in engagement
with the shaft 20 there is provided a leaf
spring 35, mounted on the carriage 20, oppo-
site the free end of the block 30, and having
on its free end a tooth 36, which passes over
the top of the hinged block 30, when the nut
formed in the same is in engagement with the
screw threads on the shaft 20, the tendency
of the leaf spring 35, being to move inwardly
toward the block 30. This catch spring 35,
is also provided with a pin 37, which serves
as a handle for withdrawing the catch so as
to unlock the block 30, and thereby allow the
carriage 23 with its appurtenances to be freely
moved to any position upon the frame 22.

To the free overhanging arm 29, is secured
a ring sleeve 38 which receives the neck 39,
projecting on one side from the frame 40, in
which latter the recording diaphragm and
stylus are mounted, and this neck 39, with its
appurtenances is fixed in any desired position
in the ring frame 38, by a clamp screw 41.
The free end of the neck 39, projects beyond
the ring frame 38, and receives the sound con-
veying tube 42, which is preferably made
flexible, and which has at its free end a
mouth-piece 43, the particular construction
of which will hereinafter be more fully de-
scribed.

The disk 4, which is in the nature of a ro-
tary table, has hereinbefore been described
and is shown in the drawings as reduced in
thickness on that portion of the periphery
which overlaps the inner wall of the pan 6,
and if this construction is used, the disk 4,
must be removable from the shaft 2. It is,
however, also practicable to make the disk or
revolving table, in two parts, the lower part
of which extending only to within a short dis-

tance of the upper edge of the inner wall
of the pan, while the upper part extends o-
that edge to within a short distance of
outer wall of the pan. This is indicated by
dotted line in Fig. 2, and if this construct
is adopted, only the upper thinner part of
table is removable from the upright shaft
while the lower thicker part of the table
be fixed to that shaft.

When a sound record is to be made, a re-
cord tablet of the kind described in my afores-
Letters Patent, is placed upon the rotary ta-
4, and this record tablet is represented in
drawings as a circular disk 44, which has
central perforation passing over the up-
per end of the shaft 2. Sometimes it is con-
venient to interpose between the record tab-
and the rotary supporting table a thin di-
45, of felt, or of some other non-resonant ma-
terial. This, however, is not essential. Un-
der the record tablet is placed a clamping pl-
46, which by preference is provided with a
hub 47, which is slipped over the upper en-
d of the shaft 2. This upper end of the sh-
2, is screw-threaded as shown, and a thun-
nut 48, is then screwed down upon the hub
the clamping plate, whereby the record tab-
is securely fastened in position.

At one end of the base plate 1, there
is mounted a standard 49, which may be a sp-
tube as shown, and in which is supported
friction a stem 50, projecting from the botto-
of a shelf 51, and which in turn supports
vessel 52, containing alcohol. From the bot-
tom of this vessel extends a tube 53, prefe-
rably provided at its free end with a flexib-
nozzle 54; and a stop-cock 55, with which the
tube is provided permits the operator to reg-
ulate the flow of alcohol from the nozzle. With
my present improvement it is necessary th-
during the whole process of tracing the re-
ord, the record tablet be covered with a fil-
of alcohol, and for this purpose a thin stream
of alcohol is directed upon the center of the
tablet, or rather upon the clamping plate 4
from which the alcohol spreads in all direc-
tions by centrifugal force, and flows over int-
the pan 6. When the tracing of the recor-
has been completed, the clamping plate is re-
moved and the record tablet also is lifted from
its support by the insertion between the sam-
of a sharp edge, such as a knife blade, or eve-
by the finger nails of the operator, and is re-
moved for further manipulation as describe
in my aforesaid Letters Patent, and also for
the manipulation which will be describe
hereinafter.

Only a very small quantity of alcohol is
used for producing a single record, but after
continued use of the machine a considerable
amount of alcohol accumulates in the pan
and this is removed by removing the table 4
or the upper, thinner part thereof, as the case
may be, by inserting a finger in each of the
pouring lips 9, and thus lifting the disk or
table 4, from the shaft 2. The pan is then
removed from the bracket 7, and the alcoho-

is poured out and preferably back into the vessel 52, by one of the pouring lips.

The recording diaphragm 56, is mounted in the circular frame 40, between a ledge formed on said frame and an annulus 57, screwed down upon the same by screws 58, as shown, or in any other suitable manner. On the rear side of that diaphragm there is applied a small block 59, of hard rubber from which extends radially an arm 60, which at its free end is turned up at right angles, outwardly and into contact with the lever 61, which carries the recording stylus 62.

The block 59, is fastened to the center of the diaphragm by a screw 63, passing through the diaphragm and through a washer 64, applied to the front side of the diaphragm. The head of this screw is faced with a disk 65, of soft rubber, and against the same bears the point of an adjusting screw 66, which is mounted in a perforated disk or spider 67, fixed in the neck 39.

The lever 61 is mounted on a plate 67', formed with a slot 68, through which a set screw 69, fixed in the annulus 57, passes. The plate 67', can thus be adjusted to various positions on the annulus, and is clamped in the adjusted position by a thumb-nut 70. One end of the plate 67' is bifurcated, and screws 71, 71, passing through the legs of the fork, are formed at their ends with bearings for the pivot points of the arbor 72, which is fixed to the lever 61. This lever, is made as light as practicable and as is consistent with rigidity, and the plate 67', together with the lever 61, which it carries, is so adjusted that the upturned end of the arm 60, bears upon the lever at the greatest practicable distance from the axis of the spindle 72, viz: at the free end of the lever. The connection between the lever and the upturned end of the arm 60 is made by a small quantity of pitch, 60', which acts as an efficient cement, and which is applied after the lever has been adjusted to its proper position. This mode of connecting the lever with the arm 60, and thereby with the diaphragm, I have found to be of great advantage for a variety of reasons, but more especially on account of the ease with which the connection is made, and unmade in case of repair, and on account of the damping effect it has upon the lever.

To the end of the lever 61, is secured the recording stylus 62, by soldering or otherwise, with its plane at right angles to the plane of the lever, as shown. The stylus is composed of a flat, and rather thin plate of spring steel, pointed at its free end, and provided with a tracing point 62'', of Iridium. The broad portion of the stylus is damped by one or two bands 72', of soft rubber, which are simply slipped over the same.

By reference to Fig. 4, it will be seen that the lever 61, with the recording stylus 62 extend across the diaphragm upon a line which constitutes a chord but not a diameter of the circle of the diaphragm. They are therefore,

eccentrically mounted with reference to the center of the diaphragm; but notwithstanding this eccentric location, the lever is rigidly connected with the center of the diaphragm and thus receives the maximum amplitude of its vibration. By thus placing the lever with the stylus eccentric with reference to the center of the diaphragm both the lever and the stylus may be and are made shorter than if they were located on the line of a diameter of the diaphragm. This is an important result, since the shorter the lever and stylus, the less liability there is of lost motion, and the less liability there is of extra or spontaneous vibrations of the lever and stylus, and both of these facts conspire to produce an accurate tracing of the sound waves impinging against the diaphragm.

Where the stylus passes over the edge of casing 40, the latter, together with the annulus 57, is cut away upon a straight line, as indicated at 57'. This permits a further reduction of the length of the stylus, since the record tablet may be located close to the straight edge 57'.

The body of the stylus is normally curved downwardly, as shown in dotted lines at 62', but when the diaphragm holder or frame 40, is turned to cause the stylus to impinge upon the record tablet, which is the preparatory step for making a record, the stylus is unbent and becomes straight, as shown in solid lines in Fig. 4, and I have found that the best results are obtained when the stylus is at an angle of about forty-five degrees with the plane of the tablet. The maximum pressure of the stylus upon the record surface is therefore equal to the force required to unbend the stylus. It is very small, because the stylus is made as thin as practicable, and it is uniform for different records and for all parts of the same record.

The mouth-piece, into which vocal sounds are uttered for recording, is shown at 43, in Figs. 1 and 8, and it consists of a bell shaped structure, the small end of which is secured to the sound conveying tube, while the wide, flaring end is turned toward the speaker who applies his mouth to the opening. Near the edge of the mouth opening there is a perforation 43', cut into the wall of the mouth-piece, and this perforation is of such shape and size, and at such distance from the edge of the mouth-piece, as to fit approximately the edge of the nose of the speaker; so that when the mouth-piece is applied, the sounds uttered by the mouth enter the wide, flaring opening, while the sounds uttered by the nose enter the perforation 43'.

In making a record of vocal sounds, it is necessary that all sound waves composing the words or the song be conveyed to the diaphragm, and it has, therefore, been proposed to make mouth-pieces of such size and shape as to admit within the opening both the mouth and the nose of the speaker or singer, and to fit against the face of the user around the

mouth and nose. Mouth pieces of this character are necessarily large and clumsy, and do not readily and comfortably fit different persons, while with my construction the size of the mouth piece is reduced, and will comfortably fit different speakers.

By means of the apparatus so far described, a record of sound waves is made in the following manner: The spring catch 35, 36, is drawn back, which permits the spring 34, to lift the block 30, from the screw 20, so that the carriage 23, may be freely moved to the left, whereby the stylus 62, is carried beyond the edge of the rotary table 4. A record tablet prepared in the manner described in my aforesaid Letters Patent is then placed upon the table 4, and clamped to the same, as hereinbefore described, and the carriage 23, is moved toward the right until the point of the recording stylus is above the tablet but within the edge of the same. The casing 40, is then turned in its bearing 38, until the point of the stylus impinges upon the tablet and is unbent, as shown in Fig. 4. In this position the casing 40, is clamped by means of the screw 41. The stop-cock 55, is then opened and a thin stream of alcohol is directed upon the clamping disk 46. The wheel 17, is now rotated by means of the crank and handle 16, whereby, by means of the gearing described, the record tablet is rotated, while the stylus is carried across the face of the tablet in a radial line, removing from the tablet a fine spiral line of the fatty etching ground with which it had been covered. Sound waves are now directed against the diaphragm in any desired manner, and if vocal sounds are to be recorded, the sound conveying tube 42, with the mouth piece 43, will be used. The vibrations of the diaphragm thus produced will cause the stylus to make a tracing of an undulatory line, corresponding to the sound waves directed against the diaphragm; all as described in my aforesaid Letters Patent. During this whole time a thin stream of alcohol is delivered upon the plate 46, and the alcohol spreading out in all directions is maintained as a uniform and constantly renewed film upon the tablet. In this manner every part of the record is made under alcohol, and in this respect my present invention differs from the process set forth in my aforesaid Letters Patent.

In accordance with the said patent, alcohol is poured once for all over the tablet, and is allowed to evaporate during the process of recording. I have found that in this manner it often happens that the alcohol has entirely evaporated before the record is completed, so that a portion of the latter is made upon a dry tablet; whereby the accumulation of filamentary particles of dust on the point of the stylus, which the alcohol is designed to avoid, takes place during the production of a portion of the record. With my present improvement this defect is cured, since it maintains the record tablet moist with alcohol from the beginning to the end of the operation.

After the tracing of the record has been completed, the tablet is speedily removed and before the record is fixed by etching as described in my aforesaid patent, the alcohol adhering to the record surface is quickly washed off with water. This is an important step in my improved process and greatly improves the definition of the record by etching. The reason for this is, that the alcohol slightly attacks and dissolves the fatty etching ground, so that the thin film of alcohol remaining upon the tablet, contains a slight quantity of that ground in solution. If now, the film of alcohol is allowed to evaporate an exceedingly small quantity of the dissolved ground is deposited upon the metal which has been laid bare by the stylus. This small deposit of ground sufficiently resists the action of the etching fluid to impair the definition of the final record. By simply pouring water over the record surface immediately after the tablet has been removed from the recording apparatus the film of alcohol and the ground held in solution by the same is removed, and the tracings of the stylus present a clean metallic surface, which is properly attacked by the etching fluid.

The reproducing apparatus as a whole is represented in Fig. 3.

Upon a base board 73, in standards 74, is journaled a shaft 75, upon which are mounted a driven pulley 76, a fly-wheel 77, and a friction disk 78. The latter is in frictional engagement with a rotary table 79, which is mounted upon a vertical shaft substantially in the manner described with reference to the rotary table 4, of the recording apparatus. Fig. 3, being a perspective view, the mounting of the table 79, is not visible, but is easily understood from the foregoing description. The upper surface of the table is preferably covered with a sheet of felt or other elastic and non-resonant material, as indicated by appropriate shading.

Upon the felt covered table 79, the record tablet 44, is placed and is clamped thereon substantially in the manner in which this is done in the transmitting apparatus, i. e., by means of a clamping plate 46, and a thumb-nut 48. A driving wheel 80, mounted on a shaft 81, which is journaled in standards 82, is rotated by means of a crank 83, and handle 84, and gives motion to the table 79, by means of a crossed belt or cord 85. The relation of the table 79, to the friction disk 78, is the same as the relation of the table 4, to the friction disk 12; that is to say, the table rests with the greater part of its weight upon the friction disk, so that the frictional gearing is automatically maintained. A post 86, mounted upon the base-board 73, has swiveled upon its upper end a fork 87, between the prongs of which is pivoted the swinging arm 88, which extends over the table 79, and has at its free end a clasp 89, which receives the neck 90, which projects from the center on one side of the casing 91, of the reproducing

diaphragm 92. This casing with its diaphragm, stylus and appurtenances, which will presently be described, can be thus turned in the clasp, and can be fixed in any adjusted position by a clamp screw 93.

Upon the end of the neck 90, which projects beyond the clasp 89, is slipped a flexible tube 94, which in turn receives the small end of a sound conveying trumpet 95, the flaring end 96 of which is turned toward the listener. A bracket 97, secured to the swinging arm 88, carries at its free end an elastic fork 98, which receives and supports the trumpet, and the parts are so proportioned that the free end of the swinging arm preponderates, so that the point of the reproducing stylus, which will presently be described, presses rather firmly upon the record tablet.

It will now be understood, that when a record tablet, having a record of sound waves upon its surface, produced in accordance with my invention, is mounted upon the table 79, and when the point of the stylus is adjusted in engagement with the record groove, and the wheel 80, is rotated, the rotating record groove will guide the stylus across the face of the tablet, and will at the same time vibrate the stylus and diaphragm in accordance with the undulations of the record groove. The sound waves thus produced by the diaphragm will issue from the flaring opening of the trumpet, and the sounds will be heard by a listener in front of the trumpet, or in its vicinity.

The reproducing diaphragm is mounted in the casing 91, in the usual manner, being held against a ledge by means of an annulus 99. On this annulus is formed a swelling or block 100, and diametrically opposite to the same the stylus carrying spring 101, is fastened to the annulus, and extends across the face of the diaphragm and beyond the edge of the annulus. This spring 101, is a leaf spring which faces with its flat side the face of the diaphragm up to a point beyond the center of the latter, and is then twisted at right angles, as indicated at 102, and crosses the annulus edgewise as shown at 103. The tendency of the part 101, of the spring is to press toward the diaphragm, whereby the edge of the part 103, is made to bear with some force upon the annulus 99; and the tendency of the part 103, is to press against the swelling or block 100. The spring is therefore elastic in two directions at right angles to each other.

In order to prevent grinding of the spring against the annulus and against the block 100, a U-shaped piece 104, of soft rubber embraces the outer portion 103, where it bears upon the annulus and against the block. This soft rubber cushion also serves as a dampener for the spring. At the point where the spring passes over the center of the diaphragm, it has a perforation 105, and a screw pin 106, secured to the center of the diaphragm by two nuts 107, 108, extends loosely through the perforation. A thumb-nut 109, also placed on the screw-pin 108, and a soft rubber washer

110 between the thumb-nut and the spring serve to regulate the tension of the latter and of the diaphragm, as will be readily understood.

On the free end of the spring 101, 103, there is secured a binding post 111, in which the stylus 112, is held by the set screw 113, and may be adjusted to project to the required distance beyond the end of the spring. This stylus is preferably made of hard steel. It has a slender point, but the point should not be so sharp as to cut the bottom of the record groove which it engages.

In the operation of reproducing the sounds recorded on a tablet, the stylus is guided by the walls of the record groove, and not by the bottom of the same. Consequently it is not essential that the point of the stylus be in contact with the bottom of the groove. In fact it is preferably not in contact with the same, so that this point may be made rather dull.

The sounds emitted by the reproducing diaphragm are very powerful and ordinarily too loud to be received with comfort by a listener in front of the trumpet or other receiving tube. For this reason I have found it sometimes necessary to reduce the volume of the emitted sound before it reaches the ear, and this I accomplish by one or more perforated and exchangeable diaphragms 114, placed in the neck 90. These diaphragms should be made of some non-resonant material like soft rubber, or cork, as indicated by appropriate shading.

Having now fully described my invention, I claim and desire to secure by Letters Patent—

1. The method of recording vocal and other sounds which consists in removing from a record tablet covered with a fatty film, undulatory lines of said film by, and in accordance with the sound waves and maintaining at the same time a layer of a fluid over the film, substantially as described.

2. The method of recording vocal and other sounds upon a rotating disk covered with a fatty film which consists in spreading over said film and continuously renewing over the same a layer of a fluid and at the same time removing from said tablet undulatory lines of the fatty film by and in accordance with the sound waves, substantially as described.

3. The improvement in the art of making a gramophone record which consists in immersing and maintaining the tablet and the point of the recording stylus in alcohol during the process of recording, substantially as described.

4. The improvement in the art of making and fixing a gramophone record which consists in removing from a tablet covered with a fatty film undulatory lines of said film by and in accordance with sound waves while said film is covered with a layer of alcohol; then immediately removing the alcohol with water and then subjecting the tablet to the

tion of an etching fluid, substantially as described.

5. The method of reproducing sounds from record of the same which consists in vibrating a stylus and propelling the same along a record by and in accordance with the said record, substantially as described.

6. In a gramophone, a recording stylus pressing by its own elasticity upon the record tablet at right angles to the plane of its vibratory movements and consisting of a leaf spring terminating in a point of harder material than that of the body of the stylus, substantially as described.

7. In a gramophone, the combination of a sound receiving diaphragm and an elastic recording stylus controlled by the diaphragm and adjustable with reference to a record tablet so as to press by its own elasticity upon the same at right angles to the plane of its vibratory movements, substantially as described.

8. In a gramophone a recording stylus pressing by its own elasticity upon the record tablet at right angles to its plane of vibratory movements, and consisting of a leaf spring terminating in an iridium point, substantially as described.

9. In a gramophone, a recording stylus composed of a leaf spring terminating in a tracing point in combination with one or more elastic non-sonorous dampers, substantially as described.

10. In a gramophone a recording stylus formed of a leaf spring terminating in a tracing point in combination with one or more sleeves of soft rubber upon the leaf spring for damping the same, substantially as described.

11. In a gramophone, the combination of a sound receiving diaphragm, a lever and a recording stylus carried by the same, both extending parallel but eccentrically over the diaphragm; with a connection between the center of the diaphragm and the lever, substantially as described.

12. In a gramophone, the combination of a sound receiving diaphragm a lever and a recording stylus carried by the same, both extending over the face of the diaphragm but eccentrically thereto, with a rigid connection between the center of the diaphragm and the free end of the lever, substantially as described.

13. In a gramophone, the combination of a circular sound receiving diaphragm, a lever and an elastic recording stylus both extending parallel with the diaphragm on the line of a chord, with a rigid connection between the center of the diaphragm and the free end of the lever, substantially as described.

14. In a gramophone, the combination of a sound receiving diaphragm, a lever and an elastic stylus carried by the same, both extending parallel, but eccentrically thereto; with a bracket rigidly connected with the center of the diaphragm and removably connected

to the lever, substantially as described.

15. In a gramophone, the combination of a sound receiving diaphragm mounted in a suitable frame, a bracket adjustably mounted on said frame, a lever pivoted in said frame extending parallel to and eccentrically with reference to the center of the diaphragm, and an elastic recording stylus carried by the lever; with a mechanical connection between the center of the diaphragm and the free end of the lever, substantially as described.

16. In a gramophone a sound receiving diaphragm and a tube for conveying sound waves thereto in combination with a recording stylus receiving motion from the diaphragm, and a screw mounted in the sound conveying tube bearing centrally upon the diaphragm for adjusting the tension of the latter, substantially as described.

17. In a gramophone, the combination of a horizontal rotary table adapted to support a record tablet, and a vertical shaft free to move longitudinally, carrying the table; with a friction disk engaged by the under side of the table for rotating the latter, substantially as described.

18. In a gramophone the combination of a horizontal rotary table mounted upon a vertical shaft and adapted to support a record tablet; with a friction disk engaging the under side of the table and partly sustaining the weight of the table, whereby the latter is automatically maintained in frictional gear with said disk, substantially as described.

19. In a gramophone, the combination of a rotary horizontal table adapted to receive and support a flat record tablet; with a reservoir of a suitable fluid, such as alcohol, discharging upon the center of the table and tablet, and an annular pan disposed underneath the table for receiving the overflow of alcohol, substantially as described.

20. In a gramophone the combination of a horizontal rotatable table adapted to receive and support a record tablet; with a reservoir of alcohol discharging upon the center of the table and tablet, an annular pan disposed under the edge of the table for receiving the overflow of alcohol, and a friction disk bearing upon the under side of the table between the center of the same and the inner wall of the pan, substantially as described.

21. In a gramophone, the combination of a horizontal rotary table adapted to receive and support a record tablet, a recording diaphragm and stylus connected by gearing with the table to move radially over and with the stylus in operative relation to the same, substantially as described.

22. In a gramophone, the combination of a horizontal rotating table adapted to receive and sustain a flat record tablet, with a carriage movable in a line parallel to a radius of the table, a recording diaphragm and stylus carried by the carriage with the stylus in operative contact with the record tablet, and

gearing connecting the table with said carriage, substantially as described.

23. In a gramophone, a sound conveying tube provided with a mouth piece having a flaring opening for the application of the mouth of the speaker and a perforation in the side wall of the mouth piece separated from and spaced with reference to the mouth opening and shaped to correspond to the shape of the nostrils of the speaker, substantially as described.

24. In a gramophone a sound reproducing diaphragm in combination with a stylus lever extending diametrically across the same, and elastic in two directions at right angles to each other, substantially as described.

25. In a gramophone, the combination of a diaphragm and a stylus carrier composed of a leaf spring twisted at one point so as to bring the edge of one portion at right angles to the face of the other portion, whereby it is elastic in two directions, substantially as described.

26. In a gramophone the combination of a reproducing diaphragm and stylus; with a stylus carrier composed of a leaf spring extending flat-wise over the face of the diaphragm and edgewise over the edge of the diaphragm, substantially as described.

27. In a gramophone the combination of a reproducing diaphragm mounted in a suitable frame the latter being provided at one point with a boss or stop; with a double elastic stylus carrier composed of a twisted leaf-spring tending toward the diaphragm and against the boss or stop, substantially as described.

28. In a gramophone, a reproducing diaphragm and stylus in combination with an elastic stylus carrier extending over the face of the diaphragm and tending toward the same, of an adjustable connection between the diaphragm and stylus carrier and adjustable for varying the pressure between diaphragm and style carrier, substantially as described.

29. In a gramophone the combination of a reproducing diaphragm mounted in a suitable frame provided with a boss or stop; with a

double elastic stylus carrier tending toward the diaphragm and toward the stop, and elastic non-resonant dampers interposed between the style carrier and the diaphragm and between the style carrier and the frame and stop, substantially as described. 50

30. In a gramophone a sound reproducing diaphragm and a sound conveying tube for the same, with one or more non-resonant perforated diaphragms in the said tube for reducing the volume of sound conveyed to the ear substantially as described. 55

31. In a gramophone a recording stylus pivoted to move in response to the vibrations of a diaphragm and elastic in a plane at right angles to such motions, substantially as described. 60

32. In a gramophone, a reproducing stylus having a wedge-shaped point engaging the walls of the record groove, substantially as described. 65

33. In a gramophone reproducer, a stylus carried or formed by a spring fixed at one end to the diaphragm holder and freely extending across and beyond the same and operatively connected with the center of the diaphragm, substantially as described. 70

34. In a gramophone reproducer, a spring constituting or carrying a stylus, fixed at one end to the diaphragm holder and extending across and beyond the periphery of the same and freely pressing against the diaphragm, substantially as described. 75

35. In a sound reproducing apparatus consisting of a traveling tablet having a sound record formed thereon and a reproducing stylus shaped for engagement with said record and free to be vibrated and propelled by the same, substantially as described. 80

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 85

EMILE BERLINER.

Witnesses:

HENRY E. COOPER,
F. T. CHAPMAN.

F. MYERS.
GRAPHOPHONE.

(Application filed Dec. 15, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

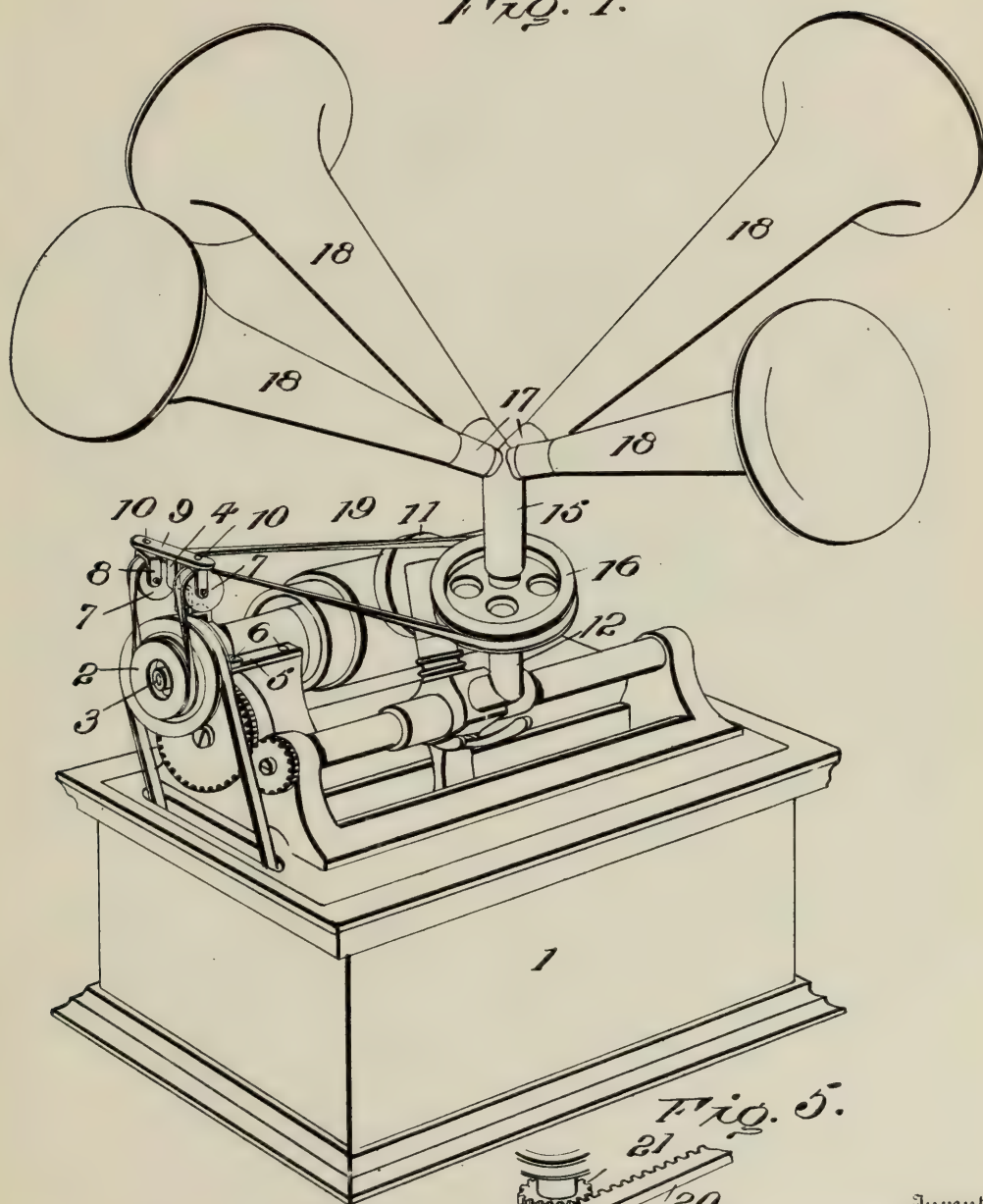
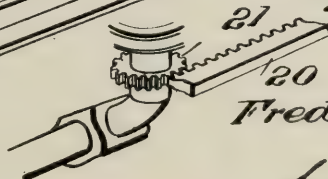


Fig. 5.



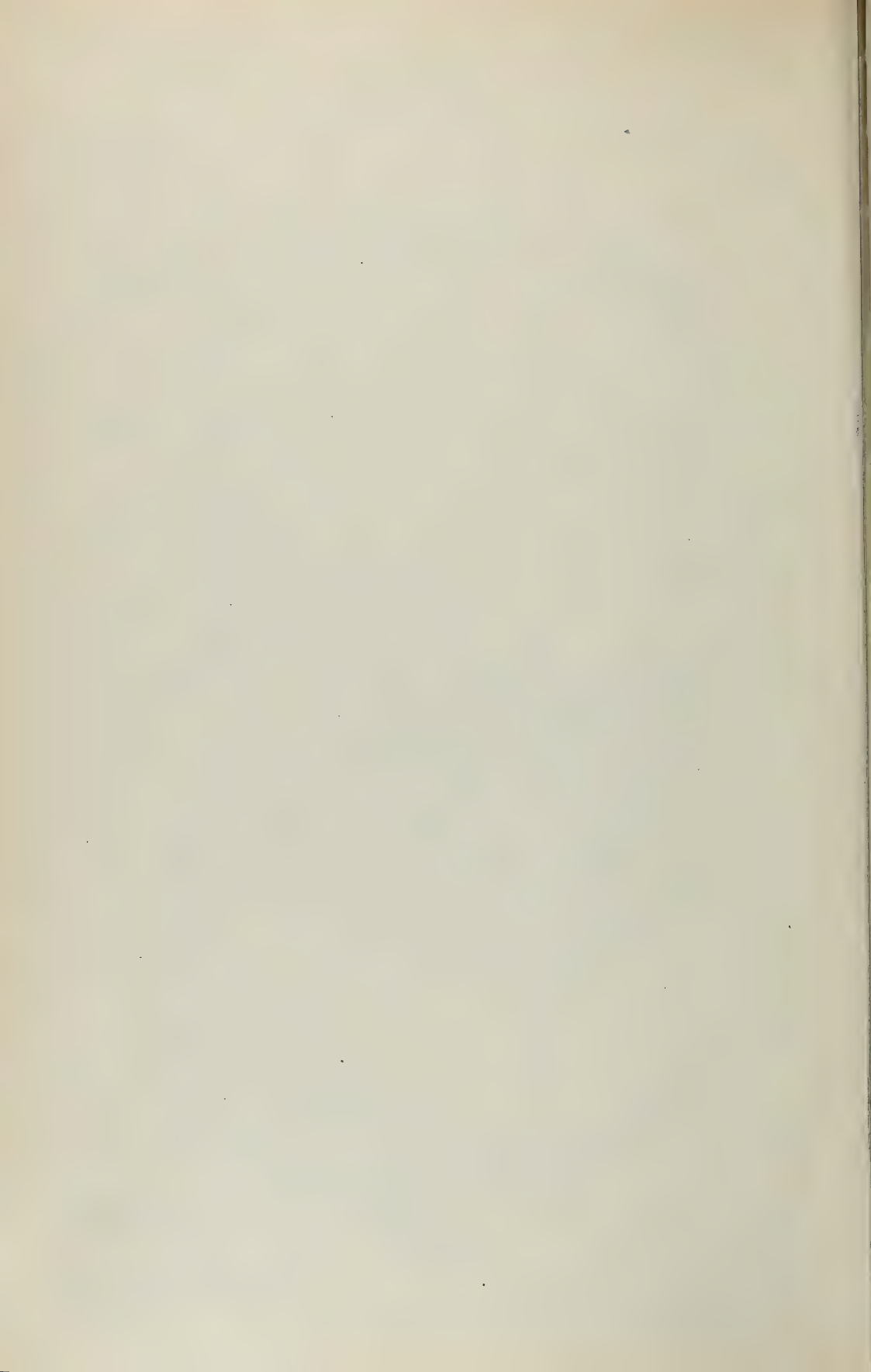
Witnesses

Jos. Imrie
F. J. Hartman

Inventor

Frederick Myers

by E. J. Bunnell & Co.,
his Attorney

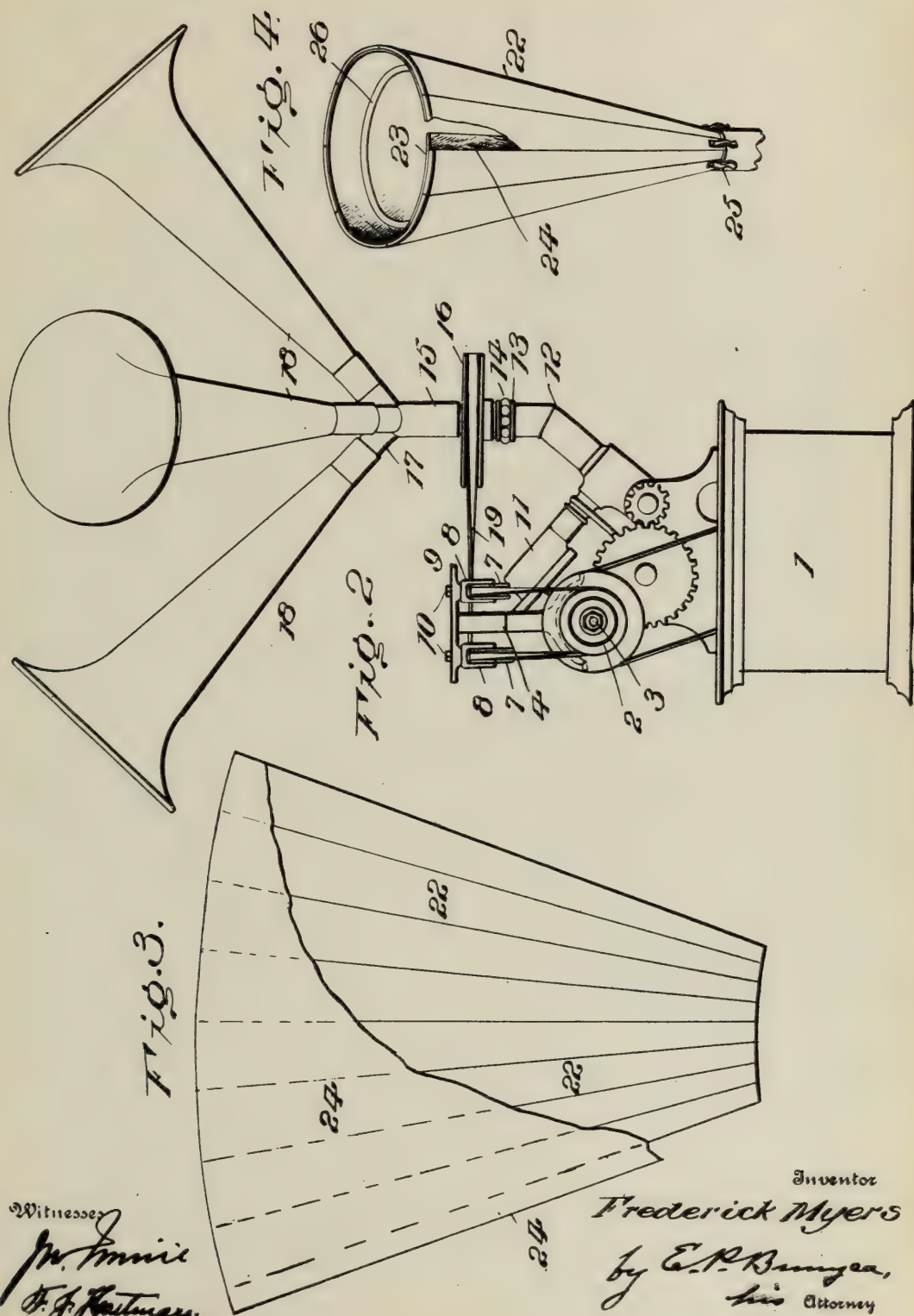


F. MYERS.
GRAPHOPHONE.

(Application filed Dec. 15, 1899.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses

J. M. Harris
F. J. Hartman

Inventor

Frederick Myers
by *E. P. Brinza*,
his Attorney

UNITED STATES PATENT OFFICE.

FREDERICK MYERS, OF NEW YORK, N. Y.

GRAPHOPHONE.

SPECIFICATION forming part of Letters Patent No. 647,147, dated April 10, 1900.

Application filed December 15, 1899. Serial No. 740,481. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK MYERS, a citizen of the United States, residing at New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Sound Transmitters or Disseminators; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to sound transmitters or disseminators for phonographs, megaphones, and similar devices; and the objects of the same are to produce a device designed to be attached to any ordinary sound-producing instrument and which will project or disseminate the sound in all directions radially from the instrument.

The defects heretofore existing in sound-reproducing instruments of the class referred to are to a great extent due to the fact that the sound is usually projected in one direction only, and while the horn or tube through which the sound is transmitted may be adjusted to project the sound in any one direction persons sitting outside the range of the horn or tube do not get the full volume or force of the music or other reproduction.

By my invention the defects referred to are entirely remedied, as by its use an audience seated in a circle around the instrument can hear equally well, the reproduction being of the same volume and scope at all points from the instrument outward. I am also enabled to produce a peculiar and pleasing effect in certain classes of music to be reproduced, said effect consisting in giving a vibratory swell or variable sound-wave character to the music, owing to the revolution given to the transmitter horns or tubes. The usual metallic or grating sounds in phonographic reproductions are to a great extent absorbed and obviated by my invention, and certain classes of music are rendered in a greatly-modulated tone and in well-measured and uniform time, owing to the fact that the revolving horns act as a speed-regulator for

the instrument and at the same time distribute the sound equally at all points around the machine.

Figure 1 is a perspective view of a graphophone having my attachment connected thereto and showing four horns or transmitter-tubes. Fig. 2 is an end view of the same, three horns or tubes being shown. Fig. 3 is a plan view of a blank for one of the horns or tubes which I may use. Fig. 4 is a perspective view of a horn or tube made from said blank. Fig. 5 is a detail perspective of a modification in the means employed for actuating or revolving the horns or tubes.

Like numerals designate like parts wherever they occur in the different views.

Referring now to Figs. 1 and 2, the numeral 1 designates a graphophone of the well-known type. Beyond placing a small pulley 2 upon the end of the record-shaft 3 no alterations or changes are made in the structure of instruments of this character. A small upright bracket 4, having feet 5 attached by screws 6 to a permanent part of the instrument, serves as a support for two idlers 7, journaled in hangers 8, pivoted at the opposite ends of a cross-bar 9 upon the ends of the screws or bolts 10. To the usual short section of tubing projecting out from the lower portion of the reproducer 11 is a tubular elbow 12, having a flange 13 surrounding its vertical portion. This flange serves as a support for a ball-bearing 14 of suitable construction, said ball-bearing being attached to a tubular section 15, having a pulley 16 rigidly connected thereto. The upper end of the tubular section 15 has three or more radially-projecting tubular nipples 17, to which the horns or tubes 18 are connected. An elastic or india-rubber band 19 passes under the pulley 2, up and over the idlers 7, and around the pulley 16.

The operation of my invention as thus far described is as follows: The reproducer 11 having been set or placed in position to start at the beginning of the record-tube the starting-lever is moved to actuate the record-shaft 3. Motion is thus imparted to the pulley 2, around which the elastic band 19 passes, and from thence the revolution is communicated to the idlers 7 and to the pulley 16, with which

the horns or tubes 18 revolve. As the reproducer 11 moves from one end of the record-tube to the other to reproduce the piece of music or other record the elastic band 19 is elongated to the extent required, and the horns or tubes 18 are thus revolved during the entire time the shaft 2 revolves. The band 19 being small and quite elastic does not absorb but little power, and as the idlers 7 are journaled in swiveled hangers they turn to direct the elastic band in a straight line to the pulley 16 and create but little friction.

As shown in Fig. 5, a rack and pinion may be used for giving revolution to the horns. The rack 20 may be attached in any suitable manner to the casing of the instrument and supported at the required height to be engaged by a pinion 21 on the tube 15. As thus arranged when the reproducer moves from end to end of the record-tube the pinion 21 engages the rack 20 and the horns 18 are revolved.

It will be obvious from the foregoing that my attachment is quite simple and inexpensive, can be quickly applied to any sound-producing instrument of the class referred to, and will project the sound outward in all directions from the instrument. The horns or tubes being connected directly to the reproducer and extending radially outward have a tendency to give the entire force or volume to the production, even though the horns were permitted to remain stationary, and for some classes of music it is deemed equally as effective to permit the horns to remain stationary by throwing the elastic band 19 off the pulley 16. Again, for certain productions I have found that a single horn if revolved will give a peculiar combined modulated and swelling effect. When stationary, I have found that at least three horns are necessary to give good results and to project the sound equally from the instrument outward.

As shown in Figs. 3 and 4, the horn or tube which I may use is made of cardboard or similar light and durable material, and such tubes may be made to occupy but little space in shipping and at the same time be inexpensive and very efficient in use. When thus made, I take a piece of cardboard and score or crease it at intervals, or a sufficient number of strips 22 of cardboard or similar material and lay them edge to edge and attach to one or both faces thereof a piece of textile fabric 23, permitting one edge 24 of the fabric to project beyond the outer strip of the series. This edge may be ready gummed, so that the tube can be readily finished by moistening the gummed edge and attaching it to the opposite edge to complete the tube, or I may use other means for securing the edges. These tubes may thus be shipped flat or folded and can be easily made up by the purchaser.

able to the reproducer-nipples any suitable number of spring-fingers 25 may be connected to the small end of the tube, and a wire ring 26 may be inserted into the large end of the tube to give the necessary strength to the device, or I may use a flat or flanged ring for the end of the tube. Tubes made in this way may have a coating of aluminium paint or bronze to give them a metallic luster.

I have found that tubes or horns made of a non-metallic material have a tendency to obviate the screeching sound so common in phonographs, and, besides, their lightness in weight makes them particularly desirable for my purpose.

Certain changes in the details of construction may be resorted to without departing from the spirit and scope of my invention. Hence I do not wish to be understood as being restricted to the details shown and described.

I claim—

1. In a sound-reproducing instrument, a sound-producer, a horn or tube connected to said producer, and means for revolving said horn or tube during the operation of the instrument.

2. In a sound-reproducing instrument, a sound-reproducer, a plurality of horns attached thereto, and means for revolving said horns during the operation of the instrument.

3. An attachment for sound-reproducing instruments, comprising a plurality of horns connected to a tubular section, and means for revolving said tubular section.

4. In a sound-reproducing instrument, a tubular section, a pulley secured thereto, a plurality of horns attached to said tubular section, a belt or band passing around the pulley and around a pulley revolved from the record-shaft.

5. In a sound-reproducing instrument, a plurality of horns secured to a hollow tubular section and projecting outward and upward from the upper end thereof, hollow connections from said tubular section to the reproducer, and means for revolving said tubular section.

6. In a sound-reproducing instrument, a tubular section having a plurality of horns projecting radially from its upper end, a pulley on said tubular section, a rubber band passing around said pulley and around idlers revolved from the record-shaft, and means for revolving the pulley, substantially as described.

7. In a sound-reproducing instrument, a reproducer, a tubular elbow attached to the nipple of said reproducer, a tubular section connected to said elbow, and a plurality of horns extending radially outward from said tubular section, and means for revolving the tubular section during the operation of the instrument.

8. In a sound-reproducing instrument, a reproducer, a tubular elbow connected to

said reproducer, said elbow having a vertically-disposed member, a tubular section connected to said vertical member, a plurality of horns extending radially outward from said tubular section, and means for revolving said tubular section during the operation of the instrument.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK MYERS.

Witnesses:

FRANCIS C. NYE,

JOS. H. S. THOMAS.

W. C. RUNGE.

GRAPHOPHONE, PHONOGRAPH, OR THE LIKE.

Application filed June 3, 1901.

(No Model.)

2 Sheets—Sheet 1.

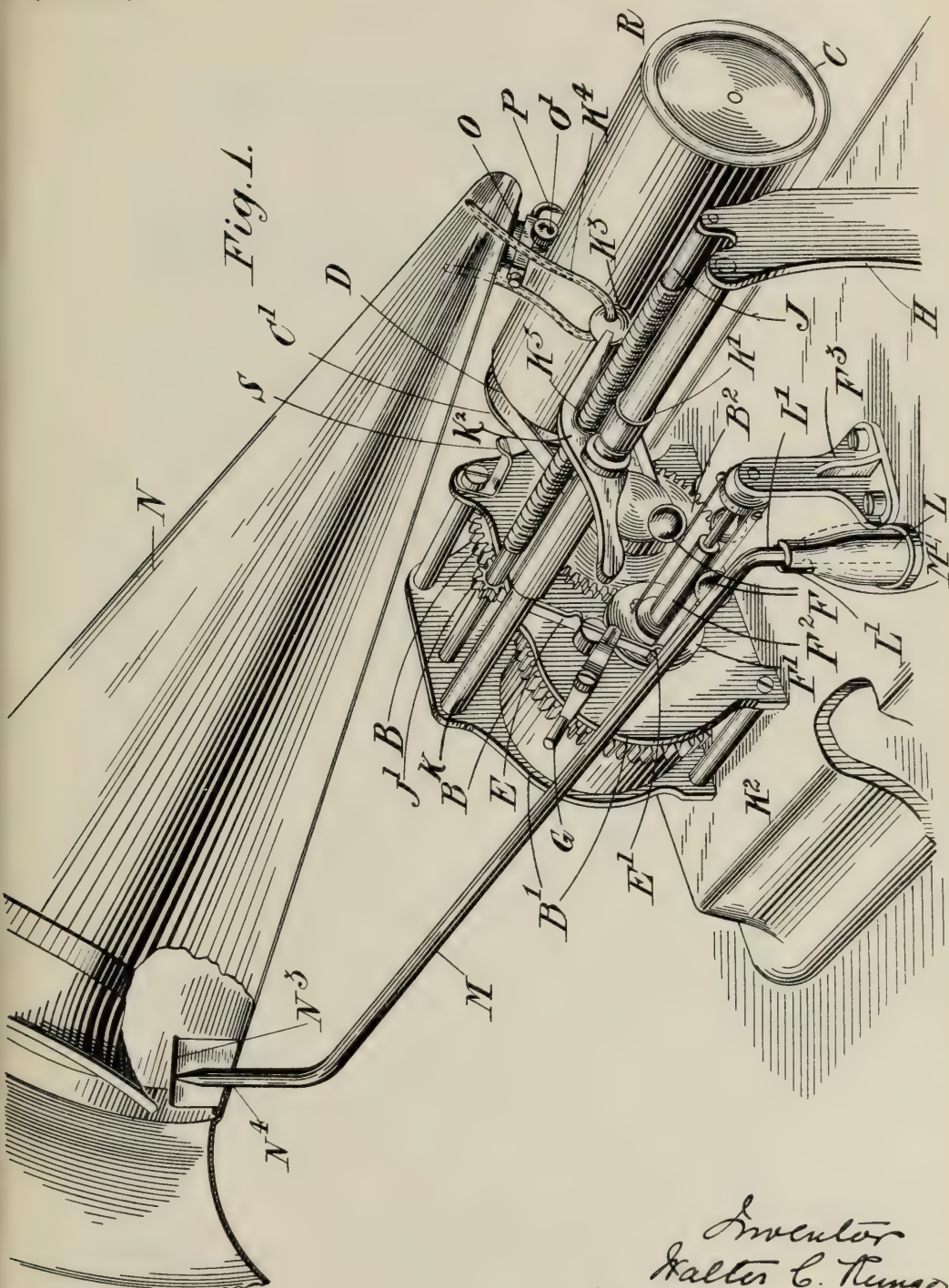


Fig. 1.

Witnesses
 H. J. M. Carthy
 J. J. M. Carthy

Inventor
 Walter C. Runge
 by Louis Freeman
 Attorneys

No. 692,363.

Patented Feb. 4, 1902.

W. C. RUNGE.

GRAPHOPHONE, PHONOGRAPH, OR THE LIKE.

Application filed June 3, 1901.

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

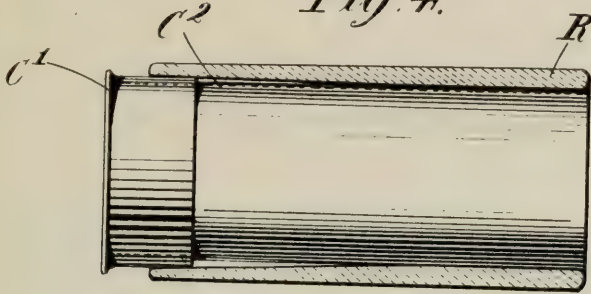


Fig. 5.

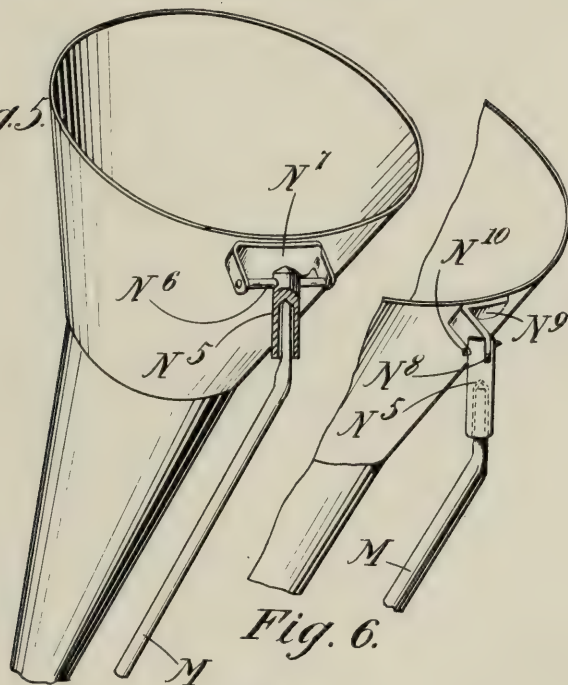


Fig. 6.

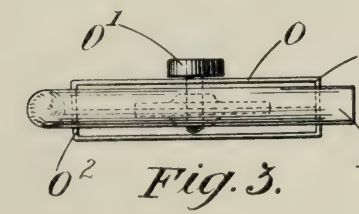
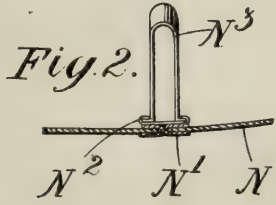


Fig. 3.

Witnesses
Am. Gullman, Jr.
J. J. McCarthy.

Inventor
Walter C. Runge
P. by
Solon Sherman
Attorneys.

UNITED STATES PATENT OFFICE.

WALTER C. RUNGE, OF LONDON, ENGLAND.

GRAPHOPHONE, PHONOGRAPH, OR THE LIKE.

SPECIFICATION forming part of Letters Patent No. 692,363, dated February 4, 1902.

Application filed June 3, 1901. Serial No. 62,991. (No model.)

To all whom it may concern:

Be it known that I, WALTER C. RUNGE, a citizen of the United States of America, residing at London, England, have invented certain new and useful Improvements in or Relating to Graphophones, Phonographs, or the Like, (for which application has been made in Great Britain under No. 9,727, dated May 10, 1901,) of which the following is a specification.

This invention relates to graphophones, phonographs, and other like instruments for reproducing sounds from records, its object being the construction of an instrument which, while thoroughly efficient in operation, is simple and cheap to manufacture.

The improvements are primarily applicable to instruments which are not provided with a diaphragm at the small end of the trumpet, but have a stylus of hardened material attached to some part of the trumpet, the point of this stylus following the channels or grooves of the record in the well-known way. It is, however, to be understood that the improvements are not necessarily restricted to this particular type of instrument.

In the accompanying drawings, Figure 1 is a perspective view of one construction of graphophone embodying the improvements according to this invention. Figs. 2, 3, and 4 are detailed views showing portions of the instrument separately, and Figs. 5 and 6 are perspective views showing alternative constructions of another portion of the instrument.

Like letters indicate like parts throughout the drawings.

With reference first to Fig. 1, A is a base-plate, preferably of cast metal of considerable thickness, so that it may be heavy and rigid. Upon this base is fixed a motor, comprising in the example illustrated a train of wheels B, mounted between two plates B', one member B² of the train being preferably of hard fiber or other non-metallic material. From this motor a record-carrying mandrel C is driven by means of a belt D and a pulley C'. The train of wheels forming the motor is driven from a spring coiled in a barrel B³ and wound up when necessary, and the rate of rotation of the record-mandrel C may be regulated by a lever E, controlled by a screwed

rod or other mechanism. (Not shown in the drawings.) One end of this lever E is furnished with a brake-block E'—say of leather—which presses against a disk F', connected to governors F, the action of the governors being to draw the disk F' away from the plate B' along a rod F², supported between the plate and a standard F³, secured to the base A. A lever G is provided, by means of which the motor may be started and stopped.

Mounted free to turn between the outer plate B' and a standard H is a fine-threaded screw J, provided with a pinion J', which is driven from one of the wheels B. Parallel to this screw J and also held between the plate B' and the standard H is a rod K, which forms a guide upon which a sleeve K' can travel and turn. This sleeve K' forms part of a pivoted guide-carrier comprising also a lever K², a head K³, and a guide-fork K⁴, the arms of the latter being covered with rubber tubing or other soft or yielding material. Normally the guide-carrier K² K³ lies upon the fine-threaded screw J, as shown in Fig. 1, and it is provided with a knife-edge K⁵ or otherwise adapted to engage with the thread of the screw J, so that when the latter rotates the guide-carrier may be caused to travel along the bar K.

Upon the base-plate A is a socket L, having a central vertical hole which accommodates the end of a rod M, the pointed extremity of which serves as a pivot to support the larger end of a sound-trumpet N. Slots L' are provided in the socket L, and pins M' upon the rod M engage with these slots when the rod M is in the socket, thus securing a definite position for the pivot of the sound-trumpet.

The sound-trumpet N may be made of any suitable material, preferably non-metallic—such, for instance, as tough paper, thin fiber, or celluloid. When sheet material, such as celluloid, is employed, the trumpet is conveniently made by providing the edges of the sheet with metal strips or grips, as shown at N' in Fig. 2, these strips being joined—say by soldering. In some constructions only one strip is used, its edges being turned over, so as to grip the edges of the sheet material of which the trumpet is formed. To the strips N' inside the larger end of the trumpet is at-

tached a small clip N^2 , forming a slide, into which the edges of a U-shaped piece of metal N^3 are inserted. The pointed end of the rod M passes through a hole N^4 and rests against the inside of the curved portion of the U-shaped piece N^3 . This U-shaped member is preferably formed so that the longitudinal portion which rests upon the point of the rod M is approximately horizontal, thus obviating the danger of any binding action taking place.

Near the smaller end of the trumpet N a socket O is provided to accommodate the stylus P , which may be of any hard material—say, for instance, glass rod or tubing. The socket O is preferably formed of spring metal and provided with a screw O' , so that the stylus may be securely gripped. In the construction shown in detail in Fig. 3 the ends of the socket are turned in, as at O^2 , so that the stylus is gripped by each end of the socket, the clamping-screw O' being in the middle.

In operation the larger end of the trumpet is pivoted, as above described, on its supporting-rod M , the smaller end passes between the arms of the fork K^4 of the pivoted carrier, and the point of the stylus P rests upon a record-cylinder R , which is mounted friction-tight upon the mandrel C . This mandrel may be made, as shown in Fig. 4, of a piece of light tubing C^2 , the diameter of which corresponds to that of the smaller end of the coned interior of the record R . At one end the tube C^2 is secured to a ring which fits the inside diameter of the larger end of the record R and conveniently forms part of the pulley C' . This ring may, if desired, be slightly coned in order to fit the adjacent portion of the interior of the record.

It is to be understood that the apparatus is so constructed that the point of the stylus P rests with a slight amount of pressure upon the record R . The guide-carrier K^2 K^3 and fork K^4 are not intended to take the weight of the trumpet, their function being primarily to act as a guide for the smaller end of the trumpet and prevent any danger of the point of the stylus quitting the grooves or channels in the record.

In order that the point of the stylus P may be withdrawn from contact with the record R or any adjacent part of the mechanism when the instrument is not in use, a small safety catch or bracket S is provided, attached to one of the plates B' . By depressing the back end of the carrier-lever K^2 the knife-edge K^5 is disengaged from the screw J and the lower end of the trumpet, with the stylus P , is lifted in the guide-fork K^4 , and the head K^3 is then allowed to rest in the catch S , in which position the stylus is out of contact with adjacent portions of the instrument.

The rest or catch is not necessarily in the form of the bracket S . It may, for example, be formed by causing the arms of the fork K^4 to approach one another in a V shape below

when the back end of the lever K^2 is depressed this contracted or V-shaped part of the fork engages with, say, the back of the stylus-clip and lifts it, with the trumpet, clear of the record.

Figs. 5 and 6 show portions of sound-trumpets made according to an alternative construction of this invention. In each of these forms a pivoted socket N^5 is provided, which accommodates the pointed end of the rod M . In Fig. 5 this socket is shown provided with a cross-arm N^6 , which is journaled in the downturned ends of a plate N^7 , attached to the trumpet. In the form shown in Fig. 6 the socket N^5 is slotted, as at N^8 , and in this slot is a lug N^9 , secured to the trumpet, the lug and the slotted socket being pivotally connected by a pin N^{10} .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet and pivotal means for supporting its larger end, means for supporting its smaller end, a pivoted guide for the smaller end of the trumpet, means for feeding said guide, and means for rocking said guide on its pivot, substantially as described.

2. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet and pivotal means for supporting its larger end, an adjustable socket attached to the smaller end of the trumpet, a stylus secured in said socket and adapted to rest upon the record and support the smaller end of the trumpet, a screw and means for rotating the same, a rod arranged parallel to said screw, a pivoted guide-carrier slidably mounted upon said rod and adapted to engage said screw, a fork carried by said guide-carrier and arranged to guide the smaller end of the trumpet, means for rocking said guide-carrier on its pivot to lift the smaller end of the trumpet and the stylus clear of the record, and means for holding the stylus out of contact with adjacent parts of the mechanism when the instrument is out of operation, substantially as described.

3. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet and pivotal means for supporting the larger end of the same, a stylus connected to the trumpet and adapted to rest upon the record and support the smaller end of the trumpet, a pivoted guide for the smaller end of the trumpet, means for feeding said guide, and means for rocking it on its pivot to lift the stylus from the record, substantially as described.

4. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet and pivotal means for supporting the larger end of the same, a stylus connected to the trumpet and adapted to rest upon the record and support the smaller end of the trumpet, a pivoted,

guide for the trumpet, means for feeding said guide-carrier, and means for rocking it upon its pivot to lift the stylus from the record, substantially as described.

5 5. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet, means for supporting the smaller end of the trumpet, and means for pivotally supporting the larger end of the trumpet, consisting of a vertical socket provided with vertical slots, a bent rod supported in said socket and provided with pins engaging said slots and also provided with a pointed extremity entering a hole in the side of the larger end of the trumpet, and a U-shaped piece over said hole within the larger end of the trumpet and arranged with a substantially horizontal longitudinal portion resting upon the point of the bent rod, substantially as described.

6. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet, and means for supporting its larger end, consisting of a vertical socket provided with slots, a bent rod supported in said socket and provided with pins engaging said slots, said rod being also provided with a pointed extremity entering a hole in the side of the larger end of the trumpet, and a U-shaped piece over said hole within the larger end of the trumpet and arranged with a substantially horizontal longitudinal portion resting upon the point of the rod, an adjustable socket attached to the smaller end of the trumpet, a stylus secured therein and adapted to rest upon the record and support the smaller end of the trumpet, a screw rotatably mounted parallel to the axis of the record, means for rotating the same, a

pivoted guide-carrier slidably mounted upon a rod and adapted to engage said screw, a fork carried by said guide-carrier and arranged to guide the smaller end of the trumpet, means for rocking said guide-carrier on its pivot to lift the smaller end of the trumpet and the stylus clear of the record, and means for holding the stylus out of contact with adjacent parts of the mechanism when the instrument is out of operation, substantially as described.

7. In a graphophone, the combination with the mandrel and record, of means for rotating the mandrel, a sound-trumpet, means for supporting the larger end thereof, consisting of a socket provided with slots, a rod supported in said socket and engaging the slots said rod being provided with a pointed extremity entering a hole in the side of the larger portion of the trumpet, and a U-shaped piece within the trumpet having an approximately horizontal longitudinal portion resting upon the point of the rod, a stylus connected to the trumpet adapted to rest upon the record and support the smaller end of the trumpet, a screw, means for rotating the same, a pivoted, slidably-mounted guide-carrier adapted to engage said screw and provided with a fork to guide the smaller end of the trumpet, and means for rocking said carrier on its pivot to lift the stylus from the record, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER C. RUNGE.

Witnesses:

HAROLD WADE,
HARRY B. BRIDGE.

[Endorsed]: Acoustics. Class 181—Sub. 2. District Court of the United States in and for the Northern District of California, Second Division. In Equity. No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. [Stamped]: Return to Department of Patents. Defendant's Exhibit Runge Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Runge Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

C. McVEETY & J. F. FORD.
SHIP'S VENTILATOR.

(Application filed July 10, 1901.)

(No Model.)

FIG. 1.

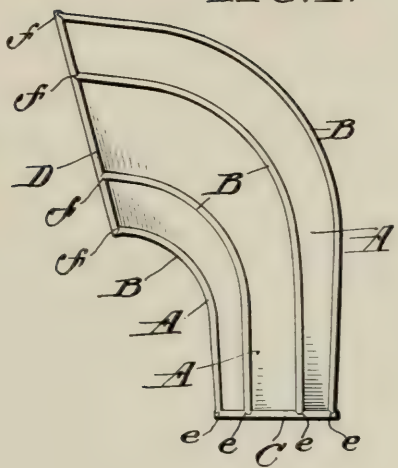


FIG. 4.

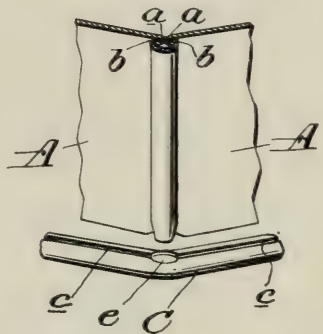


FIG. 2.

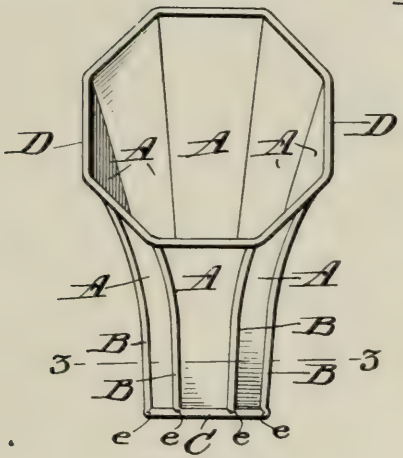
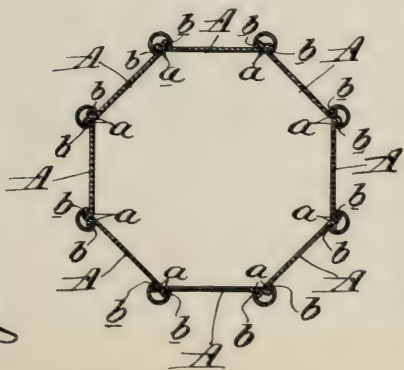


FIG. 3.



WITNESSES:

Rowman S. Sterling
Richard H. Sharp

INVENTORS

Charles McVeety
John Ford
By their attorney
Walter W. Calhoun

UNITED STATES PATENT OFFICE.

CHARLES McVEETY AND JOHN F. FORD, OF PHILADELPHIA, PENNSYLVANIA.

SHIP'S VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 899,928, dated May 13, 1902.

Application filed July 10, 1901. Serial No. 67,714. (No model.)

To all whom it may concern:

Be it known that we, CHARLES McVEETY and JOHN F. FORD, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ships' Ventilators, of which the following is a specification.

Referring to the accompanying drawings, forming part of this specification, Figure 1 illustrates a side elevation of a ventilator constructed in accordance with our invention. Fig. 2 represents a front elevation of the same. Fig. 3 shows a horizontal section on the line 3-3 of Fig. 2; and Fig. 4 represents a detached perspective view of a portion of the ventilator, showing the manner of uniting the parts.

The object of our invention is to construct a ventilator of that type known as "ships' ventilators" in the simplest and most economical manner, the plates of which the ventilator is made being stamped out in one operation, requiring no delicate bending and fitting, as is required in other types of ships' ventilators.

Referring to the reference-letters of the drawings, A represent the plates, which are of varying width and provided at the sides with upturned portions *a*, forming grooves for the reception of the ribs B, which are in the form of split tubes, the inward-projecting portions *b* being adapted to engage the grooves of the plates A.

In Figs. 1, 2, and 3 of the drawings we have shown the ventilator constructed of eight plates or sections forming an octagonal figure in cross-sections and at the base and mouth. It will be understood, however, that any num-

ber of plates, as A, may be employed without departing from the scope of our invention.

As shown in Fig. 4, the plates A at the base and mouth of the ventilator are covered with beadings C and D, having slots *c* and *d* to receive the plates A and openings *e* and *f* to receive the ribs B. The beadings C and D are firmly secured by brazing metal to the plates A and ribs B.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A ventilator comprising in combination with a series of curved plates of gradually-increasing width having upturned edges forming grooves, a series of split tubes or ribs for engaging the grooves of said plates, and ribs arranged at the base and mouth having grooves engaging the plates and openings to receive the ribs substantially as specified.

2. A ventilator comprising a curved tapered pipe octagonal in cross-section composed of plates A, having upturned end forming grooves, ribs B in the form of split tubes for engaging and holding said plates in position, and ribs C and D arranged respectively at the base and mouth of the ventilator having slotted openings to receive the plates and openings for the ribs, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

CHARLES McVEETY.
JOHN F. FORD.

Witnesses:

C. P. S. GARWOOD,
H. E. COUGHLIN.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit "N." Oct. 2, '12. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "N." Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "N." Filed Apr. 8, 1916. F. D. Monckton, Clerk.

No. 739,954.

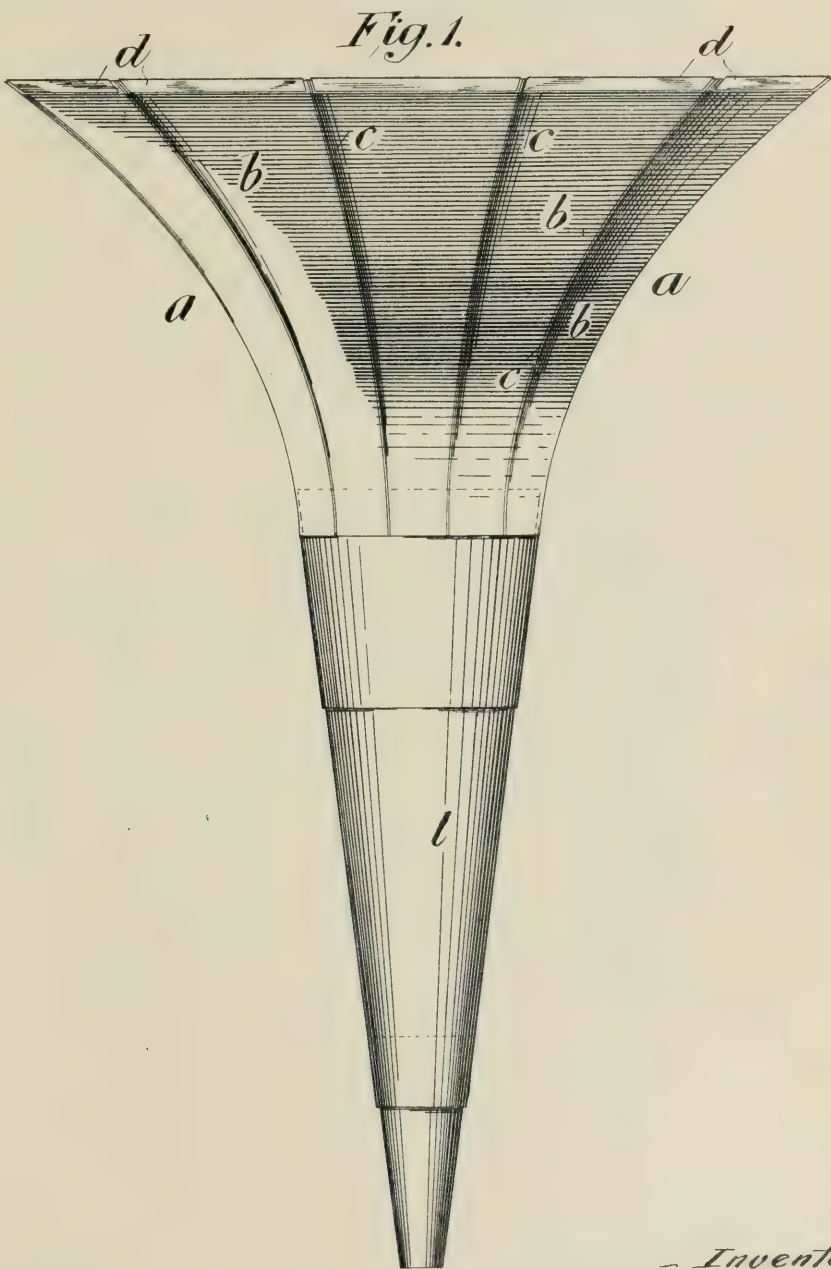
PATENTED SEPT. 29, 1903..

G. H. VILLY.
HORN FOR PHONOGRAPHS, EAR TRUMPETS, &c.

APPLICATION FILED DEC. 8, 1902.

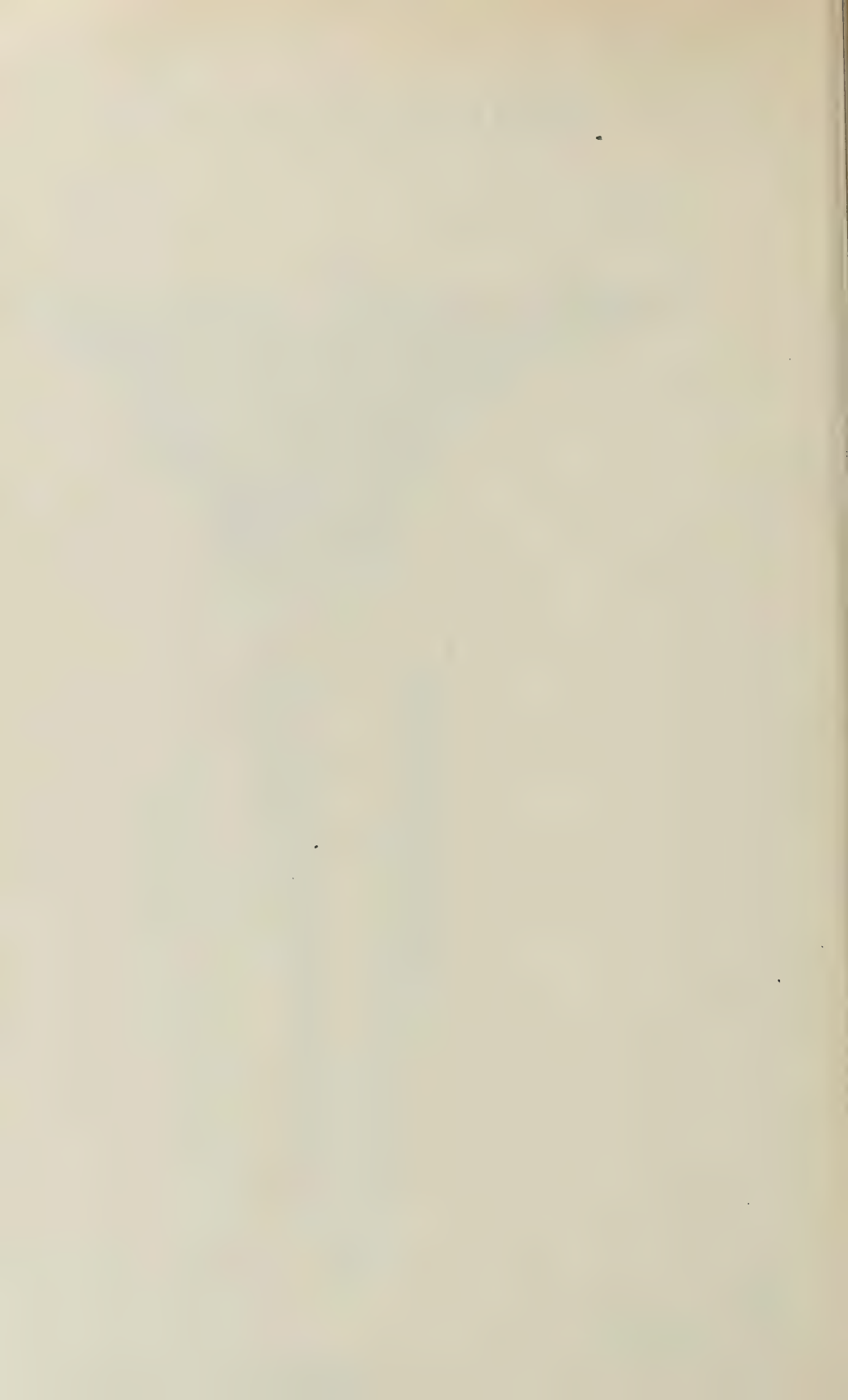
NO MODEL.

3 SHEETS—SHEET 1.



Witnesses:
L. Hilton
A. Veazie

Inventor:
Gustave H. Villy
By H. Blomson & Co
Attorneys



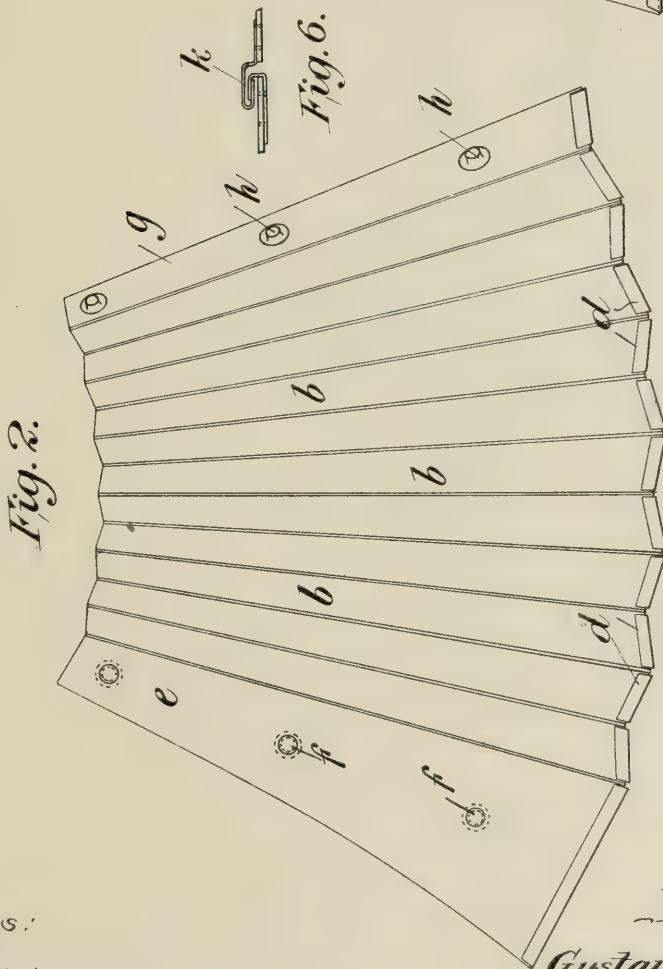
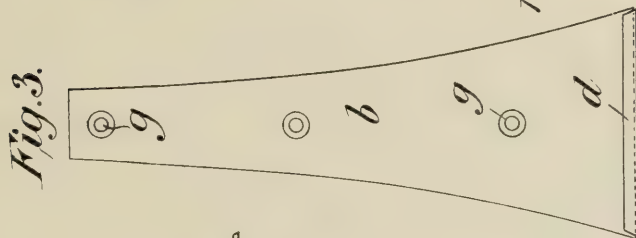
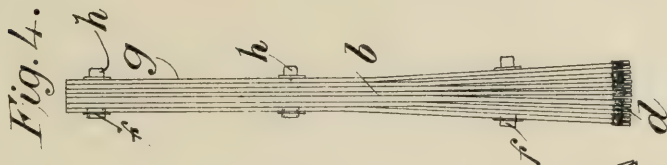
G. H. VILLY.

HORN FOR PHONOGRAPHS, EAR TRUMPETS, &c.

APPLICATION FILED DEC. 8, 1902.

3 SHEETS—SHEET 2.

NO MODEL.



Witnesses:

L. Hilton
A. Veazie

Inventor:

Gustave H. Villy.

By H. B. Villison & Co.

Attorneys—

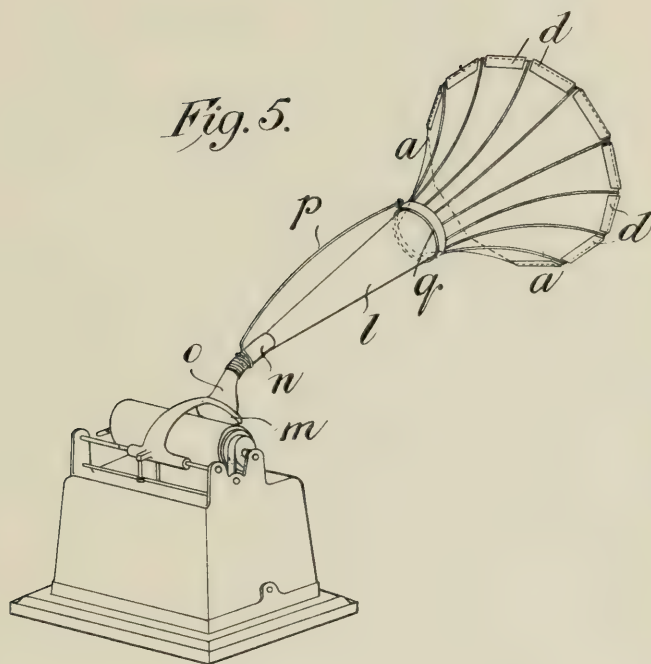
No. 739,954.

PATENTED SEPT. 29, 1903.

G. H. VILLY.
HORN FOR PHONOGRAPHS, EAR TRUMPETS, &c.
APPLICATION FILED DEC. 8, 1902.

NO MODEL.

3 SHEETS—SHEET 3.



Witnesses
L. Hilton
A. Veague

Inventor—
Gustave H. Villy—
By *H. B. Willson & Co*
Attorneys

GUSTAVE HARMAN VILLY, OF MANCHESTER, ENGLAND.

HORN FOR PHONOGRAPHS, EAR-TRUMPETS, &c.

SPECIFICATION forming part of Letters Patent No. 739,954, dated September 29, 1903.

Application filed December 8, 1902. Serial No. 134,413. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVE HARMAN VILLY, a subject of the King of Great Britain and Ireland, residing at 5 Longford Place, Longsight, Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Connection with Horns for Phonographs, Ear Instruments, and for Like Purposes, (for which I have made application for Letters Patent in Great Britain, No. 20,146, and dated 15th day of September, 1902,) of which the following is a specification.

This invention relates to improvements in connection with horns or trumpet-like sound distributors or collectors for use upon phonographs, gramophones, and other like instruments and also for ear-trumpets, fog-horns, and other sound distributing and collecting devices, the object being to provide a horn or trumpet-like device which can be folded when not in use, so as to be capable of ready transportation and for placing within the case of the phonograph or in the pocket of the user when it is to be applied to an ear instrument or the like.

The accompanying drawings represent one form of the invention.

Figure 1 is an elevation of the complete or erected horn. Figs. 2, 3, and 4 are detail views illustrating the manner in which the horn can be collapsed or folded. Fig. 5 is a perspective view illustrating one convenient application of the improved horn to a phonograph. Fig. 6 is a detail view on an enlarged scale.

In carrying my invention into effect in one convenient manner when making my folding horn for use, particularly in connection with a phonograph or like instrument, I make the end *a* of trumpet-like or curved configuration with an enlarged outer end and a smaller end at the interior of the conoidal-like form. I make this enlarged and trumpet-like device by employing a series of strips *b*, of paper, wood, linen, or other preferably flexible material, the foundations of which I prefer to make of linen or the like, so as to form a hinge-like connection *c* between each of the strips, the members *b* of which I arrange so that while lying close together when extended

there is a dividing-line between them about which they can be folded upon the base of linen or the like connecting-web upon which the paper or other material is mounted. The longitudinal hinged edges *c* of the flexible segments or sectors *b* are curved in such manner that although the segments when opened out cannot lie in the same plane they can either be folded together in a zigzag manner, so as to lie parallel to one another, as shown in Figs. 2 to 4, or extended by springing or buckling into the requisite trumpet or bell-like form, as shown in Figs. 1 and 5. The angles formed by the meeting of the hinged segments when extended form, as it were, ribs, giving rigidity to the trumpet form. The outer ends of the segmental-like strips I prefer to protect by a bent or turned-over edging *d* of metal, making the connection rigid by pressing a portion of the strip of metal or other binding material into the edge of the paper or the like foundation.

Upon the extreme member *e* of the series of strips *b* thus formed into one band I provide eyelets for other clip-like devices for enabling snap projections *h* on the opposite end strip *g* to be engaged therewith and when thus engaged to form a completed trumpet-like sound-distributor.

Instead of arranging eyelets or hook-like clips upon the outer members of the series of strips I may make one to engage with the other by forming a bead-like connection or flange *k* upon one member, into which the corresponding projecting or engaging portions of the other may enter, as shown in Fig. 6. When providing for an extension and a long funnel-like carrier for the built-up trumpet-like end *a* to engage with, I sometimes make a conical tube *l*, the enlarged end of which engages with the inner end of the trumpet-terminal *a*, while the smaller end of the cone engages with the receiver *m* of the phonograph or enters into the rubber or other tubular or flexible connection which may be employed for use upon any particular instrument. I prefer to make this extended or carrying member *l* for the collapsible trumpet from paper or other suitable material built up in a similar manner to that hereinbefore described to my collapsible end, or the

cone may be made in a short length in one piece, or it may be made telescopic when so desired.

When providing for a flexible connection at the extreme end of the cone *l*, I attach a length of rubber or the like tubing *n*, which I bind with metal or other band at the end for the purpose of inserting it upon the funnel *o* of the phonograph-reproducer, and I stiffen the combination trumpet and funnel with flexible end by providing one or more bars *p* of metal or the like stiffeners which support the funnel by means of elastic or other connections *q*, arranged upon the cone end and suspended from the projecting stiffening hook or members *p*, carried from the metal end or binder of the flexible tube *n*.

When constructing a funnel or tube for an ear-trumpet or for a fog or speaking horn or the like, I employ the same method of building up the segments to form the expanding-surface, modifying the arrangement of the inner end to suit the connection that is to be made therewith, so that when the trumpet is in use it can be extended and a large outer area exposed for the collection of sound and when not in use it can be folded, each segment upon the other, so as to occupy but little space—that is to say, a trumpet such as illustrated in Figs. 1 to 4 would be suitable as an ear-trumpet.

I am aware that it has hitherto been proposed to form conical or pyramidal horns from cardboard provided with a linen foundation; but such horns have been made up from a single flat scored sheet or from a number of flat triangular strips having straight edges. Such horns could be developed or laid out upon a flat surface. Owing to their formation if such horns were made collapsible they would have to be sustained in their conical form by additional sustaining means, or if they were made self-sustaining they could not be made collapsible. In contradistinction to this my collapsible horn could not be made up from a single flat sheet, as each strip has to be made with curved edges, and when the strips are flexibly secured together at such curved edges the whole or complete surface so formed cannot be laid out or developed on a flat surface. My horn, owing to the curvature of the edges of the strips, is self-sustaining and requires no additional stiffening or sustaining devices, although when it is desired to collapse the horn this may be effected by forcibly straightening and folding the strips one against the other in the manner hereinbefore described with reference to Figs. 2, 3, and 4. The horn when erected offers a decided resistance to such straightening or folding sufficient to render it self-sustaining against all ordinary shocks liable to be encountered; but it is found that when one strip has been forcibly straightened or folded

against another the equilibrium of the trumpet is destroyed and the whole may be easily collapsed.

I do not limit the application of my invention to any particular method of building up the segments or to any special curve or configuration of the same, and I vary the method of jointing and stiffening them to suit the material from which the strips are constructed and the foundation or base fabric upon which the flexible material forming the strips is secured.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprised of a number of flexible strips having curved meeting edges substantially as set forth.

2. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges and mounted on a flexible foundation, substantially as and for the purposes hereinbefore set forth.

3. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges, a flexible foundation for said strips and means for detachably securing the two extreme strips together, substantially as set forth.

4. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges, flexible connections between such edges and protecting means on the outer exposed edges, substantially as set forth.

5. A phonograph-horn, ear-trumpet or the like comprising a rigid conical tube and a collapsible trumpet-shaped mouth the latter being made up of a number of flexible strips having curved meeting edges, and flexible connections at such edges, substantially as hereinbefore set forth.

6. A horn of the class described comprising a rigid conical tube, and a collapsible trumpet-shaped mouth made up of a number of flexible strips having curved meeting edges, said mouth being connected to said rigid conical tube, substantially as described.

7. A horn of the class described comprising a rigid conical tube, and a collapsible trumpet-shaped mouth made up of a number of flexible strips having curved meeting edges, said mouth being telescopically connected to said conical tube, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

GUSTAVE HARMAN VILLY.

Witnesses:

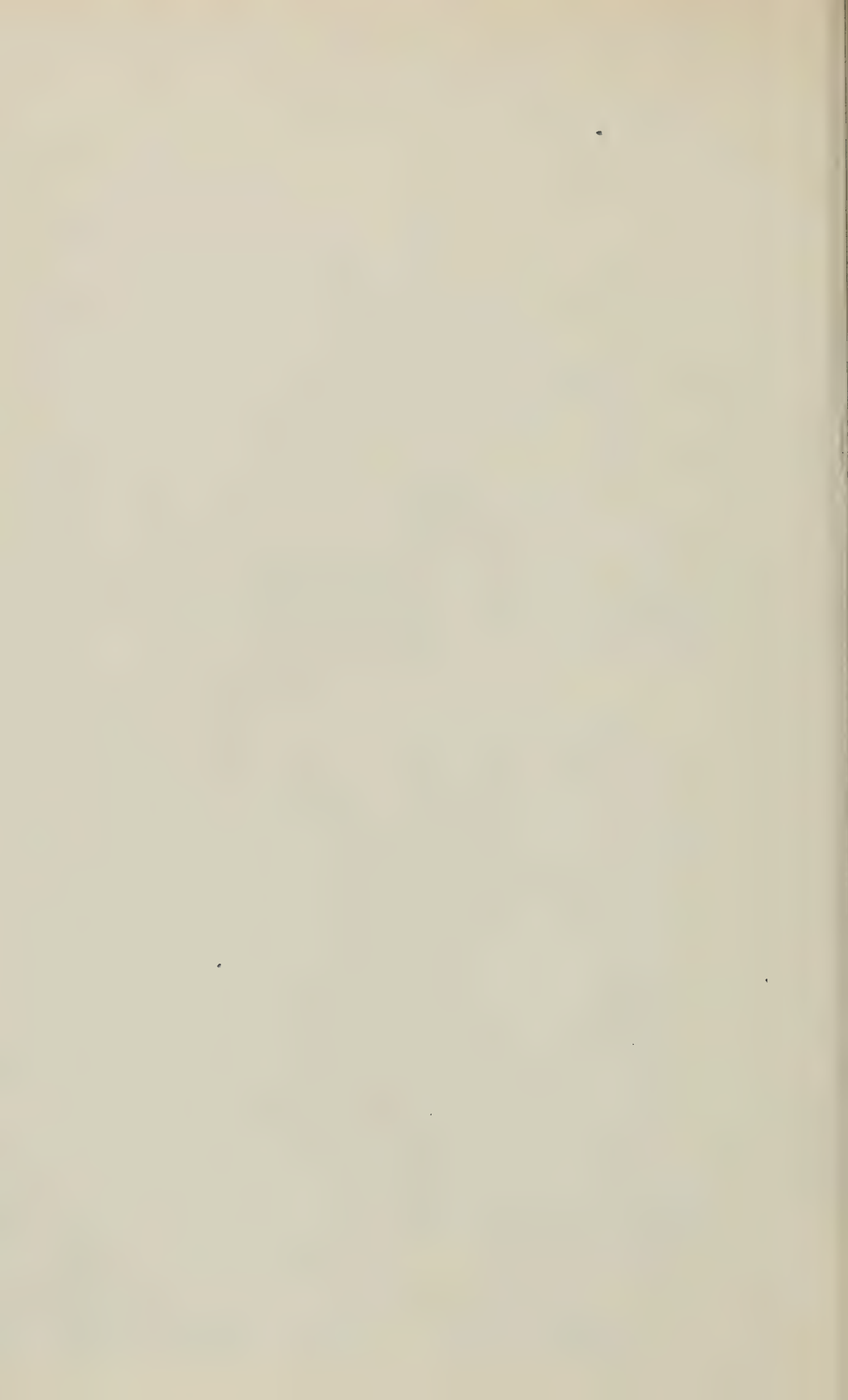
DORA VILLY,

V. A. B. HUGHES.

[Endorsed]: District Court of the United States in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co., vs. Sherman, Clay & Co. Defendant's Exhibit Villey Patent, of 1903. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Villey Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.



E. A. SCHOETTEL.
PROCESS OF MANUFACTURING HORNS.

APPLICATION FILED FEB. 18, 1904.

NO MODEL.

Fig. 1.

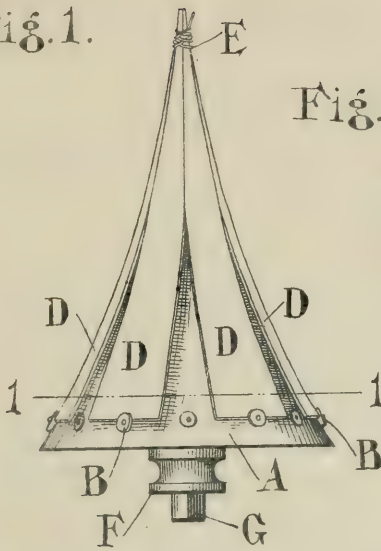


Fig. 3.

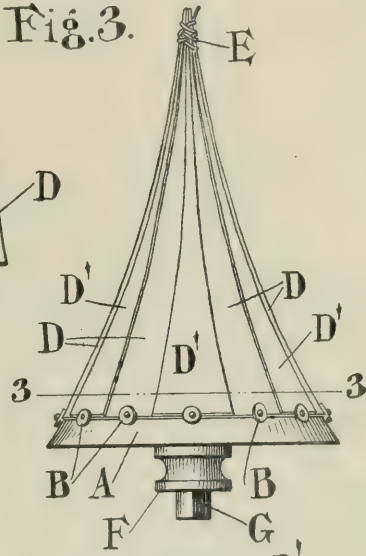


Fig. 5.

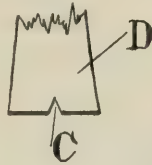


Fig. 2.

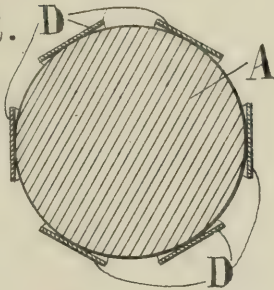


Fig. 4.

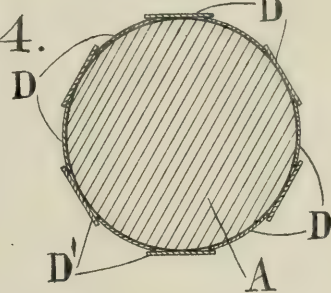
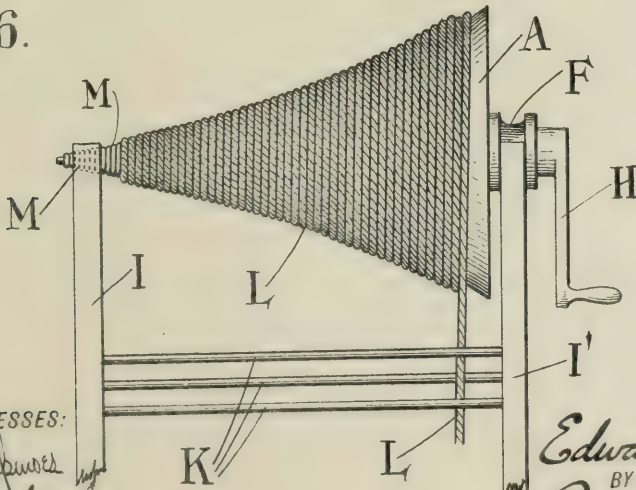


Fig. 6.



WITNESSES:

Lindley Schumacher
F. M. Donbach

INVENTOR

Edward A. Schoettl
BY
Phillips Abbott
ATTORNEY

UNITED STATES PATENT OFFICE.

EDWARD A. SCHOETTEL, OF BROOKLYN, NEW YORK, ASSIGNOR TO
EMMA J. SCHOETTEL, OF BROOKLYN, NEW YORK.

PROCESS OF MANUFACTURING HORNS.

SPECIFICATION forming part of Letters Patent No. 769,410, dated September 6, 1904.

Application filed February 18, 1904. Serial No. 194,161. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. SCHOETTEL, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented a new and useful Process or Method for the Manufacture of Megaphone and Similar Horns, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, in which—

Figure 1 illustrates an elevation of the former or block on which the horn is made, showing some of the pieces or gores of paper or similar material in position thereon which, with others, are to form the horn. Fig. 2 illustrates an end view of that which is shown in Fig. 1 on the line 1 1 of that view. Fig. 3 illustrates an elevation similar to that shown in Fig. 1, showing, however, all of the pieces or gores also of material which, with the others shown, are to form the horn, in place on the former, covering the spaces between the longer gores. Fig. 4 illustrates an end view of that which is shown in Fig. 3, taken on the line 3 3 of that figure. Fig. 5 illustrates a detail showing the notch in the lower end of the gores, whereby they are held in position on the former. Fig. 6 illustrates an elevation of the apparatus whereby the gores are all drawn forcibly down to position and held there until dried.

A represents the conical or tapering former or block upon which the horn is made up from a series of tapered or gore-shaped pieces D D D' of paper or similar material. The former may be and usually is made of wood, although any other suitable material may be used. Its exterior shape determines the shape of the horn.

B B are a series of catches, which may be like very large headed nails, driven into or fastened to the former at stated intervals near its larger end, as shown, in such positions that a notch C (see Fig. 5) made in the lower edge of each of the gores will fit under the appropriate nail, and thereby that end of the gore will be held against lateral movement during the process of applying them upon the former.

The upper ends of the gores (see Figs. 1

and 2) are confined partly by glue or other adhesive material applied to them where they overlap and also by a cord E, which is tightly tied about their upper ends, where they are applied to the former.

F is a round bearing, preferably grooved, as shown, fastened centrally on the base of the former, and outside of the journal part is a squared projecting part G, adapted to receive a crank H. (See Fig. 6.)

I and I' are two vertical bars constituting a frame, which is suitably braced and provided with suitable tension devices, such as the cross-bars K K. At the upper end of the bar I there is an open-ended semicircular notch or journal, adapted to receive the small end of the former with the tied ends of the gores thereon, and on the upper end of the other bar, I', there is another open-ended journal, adapted to receive the bearing F.

L is a small rope, which may be about the size of an ordinary clothes-line or somewhat larger, if preferred, and it is of such length as to make successive coils, preferably touching each other, the whole length of the gores and preferably one or two additional coils. I prefer that at the smaller end of the horn a few feet of material, such as pigskin or belt lacing M, be substituted for the rope, but attached to it, because such material, being more pliant and self-adjusting than the rope, will more satisfactorily draw the small and relatively stiff edges of the narrower part of the gores into position than the rope will, and also some part of the pigskin lacing necessarily, or at least preferably, rests within the journal, being wound tightly thereon under the strain of the crank in such manner that the former revolves on it, and I have found that the pressure of this operation on the pliant lacing secures a better finish to the small end of the horn than if the rope were used and also that the lacing will not wear or fray out as much as the rope will.

The operation is as follows: After the gores have been applied to the former in the manner stated the former is lifted from its primary support and placed in the winding-frame. (Shown in Fig. 6.) Then the crank is applied

the squared box C, and the end of the lacing M is firmly attached to the small end of the former, preferably just at the ends of the gores or slightly beyond them. Then one operative forcibly turns the crank which rotates and applies tension upon the rope and lacing. In this way the strain may be uniform or varied, as circumstances require and as observed, during the winding operation to draw all the edges of the several gores from their angular position (shown in Figs. 2 and 4) into the requisite circular form to make a handsomely-finished and uniformly-shaped product. If the glue or other adhesive material has at all set or chilled before the forming pressure is applied to the gores, then I subject the same to a blast of steam, which will soften the adhesive material and render all parts pliant, so that they will readily respond to the pressure exerted by the lacing and rope, or by the rope alone if the lacing is not used.

Obviously lacing may be used throughout, if preferred, and any equivalent material other than the rope or lacing may be substituted therefor.

After the compression or forming of the gores has been finished by winding the rope or its equivalent on them, as shown, then the end of the rope is suitably fastened and the whole set aside to dry in its then condition. Meantime other horns may be made on other formers. When dry, the rope and lacing are unwound and removed, and then the edges of the gores are sandpapered down and the horn is finished in the usual way.

It will be obvious to those who are familiar with this art that many modifications may be made in the details of construction and operation of the parts. The former may be turned by machinery, and the flexible rope binder may be manipulated in a variety of ways, all, however, within the spirit and embodying the essentials of my process, which consists in the application upon the gores of the horn while they are held in position and while the adhesive material is yet soft of the pressure of a flexible binding device adapted to apply equal or varying pressures, as desired, upon each and every part of the gores, irrespective of the shape and size of the horn and of the material of which it is composed.

I claim—

1. The process described in the manufacture of horns, consisting in cutting the material of which the horn is to be made into gore-shaped pieces, detachably attaching said pieces to an interior former, whereby circumferential movement of one relative to the other is prevented, the edges of said pieces overlapping, applying adhesive material between the overlapping edges, revolving the interior former and the pieces with it while the adhesive material is still soft and subjecting the parts composing the horn to the continuous

and forcible pressure of a single flexible and elastic binding device which is wound upon them under tension as the former revolves.

2. The process described in the manufacture of horns, consisting in cutting the material of which the horn is to be made into gore-shaped pieces, detachably attaching said pieces to an interior former, whereby circumferential movement of one relative to the other is prevented, the edges of said pieces overlapping, applying adhesive material between the overlapping edges, revolving the interior former and the pieces with it while the adhesive material is still soft and subjecting the parts composing the horn to the continuous and forcible pressure of a single flexible and elastic binding device, which is wound upon them under tension as the former revolves, the winding of the binding device upon the gore-shaped pieces commencing at the small end of the horn and progressing toward the larger end thereof.

3. The process described in the manufacture of horns, consisting in cutting the material of which the horn is to be made into gore-shaped pieces, detachably attaching said pieces to an interior former, whereby circumferential movement of one relative to the other is prevented, the edges of said pieces overlapping, applying adhesive material between the overlapping edges and winding under tension continuously applied always in the same direction upon the parts composing the body of the horn, while they are supported in position upon the former, a flexible and elastic binding device, which is wound upon the said pieces commencing at the small end and extending toward the larger end, said binding device being provided with means whereby its tension may be varied at will.

4. The process described in the manufacture of horns, consisting in cutting the material of which the horn is to be made into gore-shaped pieces, detachably attaching said pieces to an interior former, whereby circumferential movement of one relative to the other is prevented, the edges of said pieces overlapping, softening adhesive material previously applied between the overlapping edges by the application of steam thereto, revolving the interior former and the pieces with it while the adhesive material is plastic and adhesive and subjecting the parts composing the horn to the continuous and forcible pressure of a single flexible and elastic binding device which is wound upon them under tension as the former revolves.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD A. SCHOETTEL.

Witnesses:

FLORA M. DONSBACH,

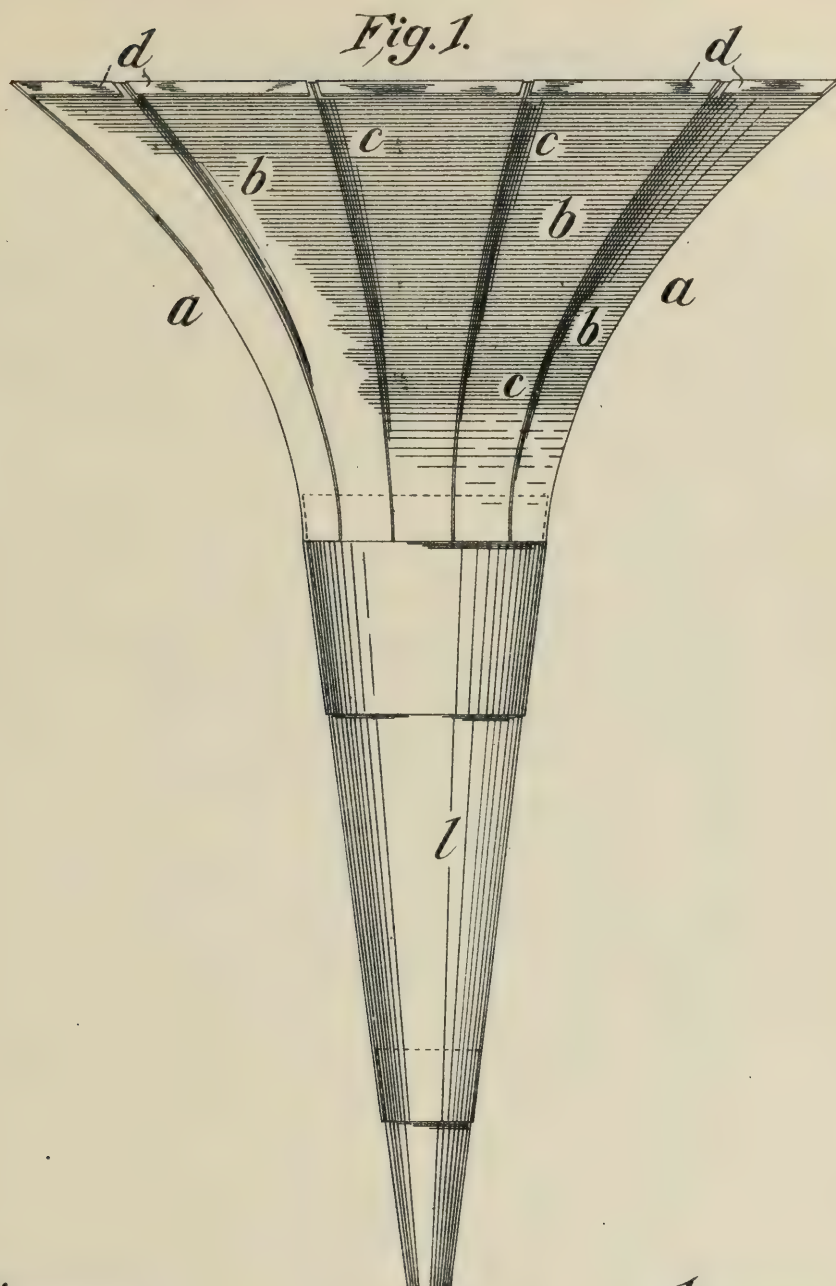
ALFRED G. SCHOETTEL.

G. H. VILLY.

HORN FOR PHONOGRAPHS, EAR TRUMPETS, &c.

APPLICATION FILED OCT. 26, 1905.

3 SHEETS—SHEET 1.



Witnesses

C. Andrews

J. B. Additt

Inventor

By His Gustave Harman Villy

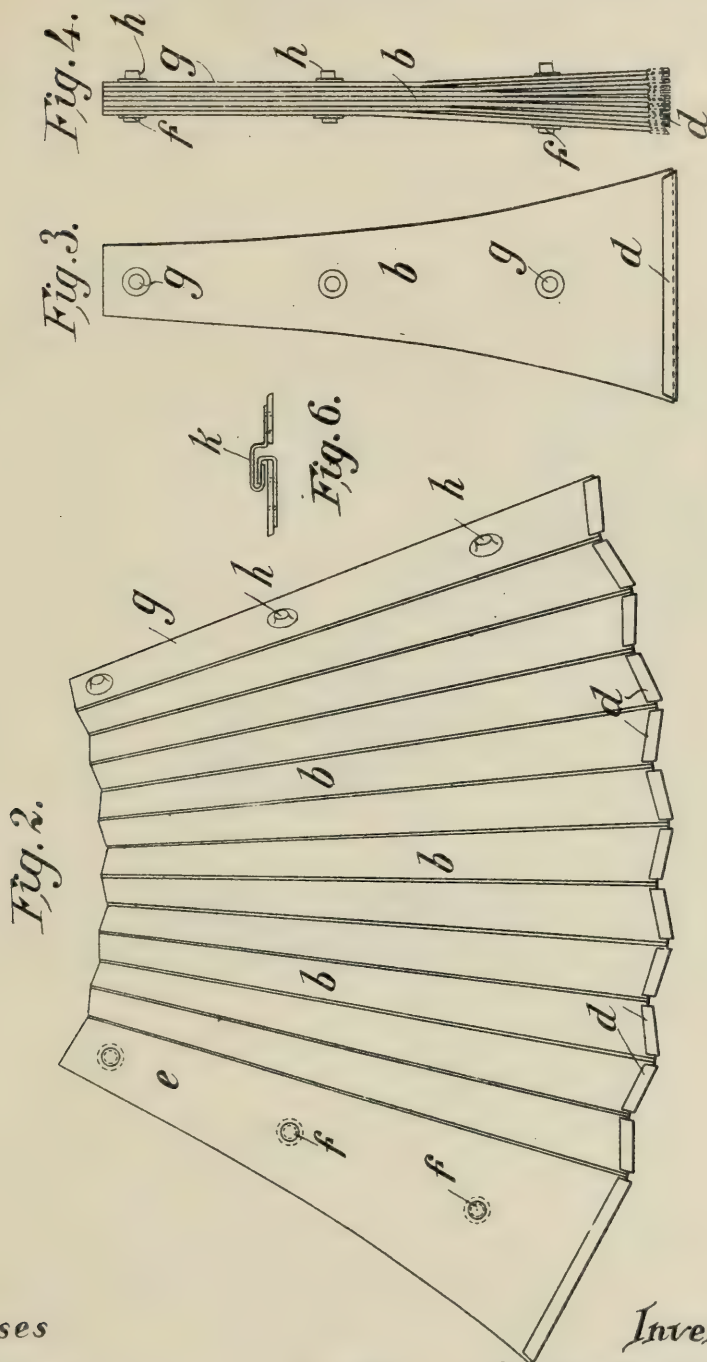
Attorney J. B. Stickney

G. H. VILLY.

HORN FOR PHONOGRAPHS, EAR TRUMPETS, &c.

APPLICATION FILED OCT. 26, 1905.

3 SHEETS—SHEET 2.



Witnesses

C. H. Andrews

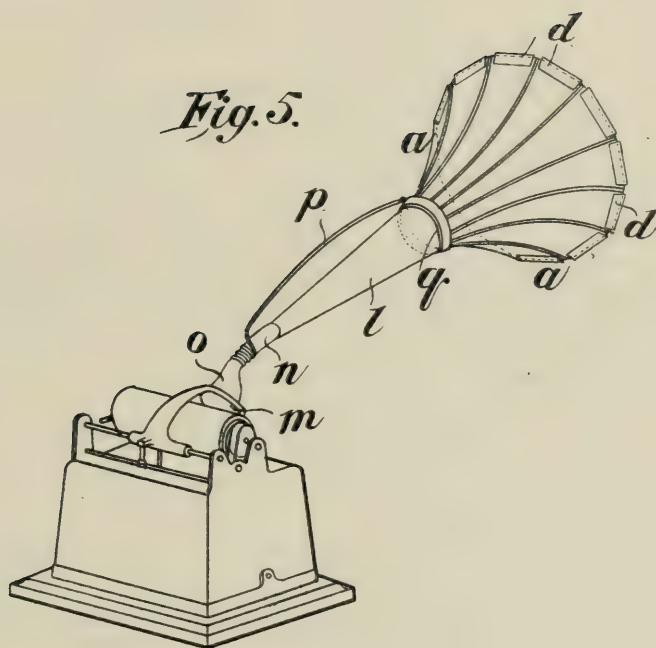
J. B. Sackett

Inventor

By His *Gustave Harman Villy*
Attorney *B. B. Stickney*

G. H. VILLY.
HORN FOR PHONOGRAPHS, EAR TRUMPETS, &c.
APPLICATION FILED OCT. 26, 1905.

3 SHEETS—SHEET 3.



Witnesses

E. H. Andrews

J. B. Daddett

Inventor

By His Gustave Harmon Villy
Attorney B. B. Stetney

HORN FOR PHONOGRAPHS, EAR-TRUMPETS, &c.

No. 12,442.

Specification of Reissued Letters Patent.

Reissued Jan. 30, 1906.

Original No. 739,954, dated September 29, 1903. Application for reissue filed October 26, 1905. Serial No. 284,581.

To all whom it may concern:

Be it known that I, GUSTAVE HARMAN VILLY, a subject of the King of Great Britain and Ireland, residing at 5 Longford Place, Longsight, Manchester, in the county of Lancaster, England, have invented certain new and useful Improvements in Connection with Horns for Phonographs, Ear Instruments, and for Like Purposes, (for which I have made application for Letters Patent in Great Britain, No. 20,146, and dated 15th day of September, 1902,) of which the following is a specification.

This invention relates to improvements in connection with horns or trumpet-like sound distributors or collectors for use upon phonographs, gramophones, and other like instruments, and also for ear-trumpets, fog-horns, and other sound distributing and collecting devices, the object being to provide a horn or trumpet-like device which can be folded when not in use, so as to be capable of ready transportation and for placing within the case of the phonograph or in the pocket of the user when it is to be applied to an ear instrument or the like.

The accompanying drawings represent one form of the invention.

Figure 1 is an elevation of the complete or erected horn. Figs. 2, 3, and 4 are detail views illustrating the manner in which the horn can be collapsed or folded. Fig. 5 is a perspective view illustrating one convenient application of the improved horn to a phonograph. Fig. 6 is a detail view on an enlarged scale.

In carrying my invention into effect in one convenient manner when making my folding horn for use, particularly in connection with a phonograph or like instrument, I make the end *a* of trumpet-like or curved configuration with an enlarged outer end and a smaller end at the interior of the conoidal-like form. I make this enlarged and trumpet-like device by employing a series of strips *b* of paper, wood, linen, or other preferably flexible material, the foundations of which I prefer to make of linen or the like, so as to form a hinge-like connection *c* between each of the strips, the members *b* of which I arrange so that while lying close together when extended there is a dividing-line between them, about which they can be folded upon the base of

linen or the like connecting-web, upon which the paper or other material is mounted. The longitudinal hinged edges *c* of the flexible segments or sectors *b* are curved in such manner that although the segments when opened out cannot lie in the same plane they can either be folded together in a zigzag manner, so as to lie parallel to one another, as shown in Figs. 2 to 4, or extended by springing or buckling into the requisite trumpet or bell-like form, as shown in Figs. 1 and 5. The angles formed by the meeting of the hinged segments when extended form, as it were, ribs, giving rigidity to the trumpet form. The outer ends of the segmental-like strips I prefer to protect by a bent or turned-over edging *d* of metal, making the connection rigid by pressing a portion of the strip of metal or other binding material into the edge of the paper or the like foundation.

Upon the extreme member *e* of the series of strips *b* thus formed into one band I provide eyelets *f* or other clip-like devices for enabling snap projections *h* on the opposite end strip *g* to be engaged therewith and when thus engaged to form a completed trumpet-like sound-distributor.

Instead of arranging eyelets or hook-like clips upon the outer members of the series of strips I may make one to engage with the other by forming a bead-like connection or flange *k* upon one member, into which the corresponding projecting or engaging portions of the other may enter, as shown in Fig. 6. When providing for an extension and a long funnel-like carrier for the built-up trumpet-like end *a* to engage with, I sometimes make a conical tube *l*, the enlarged end of which engages with the inner end of the trumpet-terminal *a*, while the smaller end of the cone engages with the receiver *m* of the phonograph or enters into the rubber or other tubular or flexible connection which may be employed for use upon any particular instrument. I prefer to make this extended or carrying member *l* for the collapsible trumpet from paper or other suitable material built up in a similar manner to that hereinbefore described to my collapsible end, or the cone may be made in a short length in one piece or it may be made telescopic when so desired.

When providing for a flexible connection at the extreme end of the cone *l*, I attach a

length of rubber or the like tubing *n*, which I bind with metal or other band at the end for the purpose of inserting it upon the funnel *o* of the phonograph-reproducer, and I stiffen the combination trumpet and funnel with flexible end by providing one or more bars *p* of metal or the like stiffeners which support the funnel by means of elastic or other connections *q*, arranged upon the cone end and suspended from the projecting stiffening hook or members *p*, carried from the metal end or binder of the flexible tube *n*.

When constructing a funnel or tube for an ear-trumpet or for a fog or speaking horn or the like, I employ the same method of building up the segments to form the expanding surface, modifying the arrangement of the inner end to suit the connection that is to be made therewith, so that when the trumpet is in use it can be extended and a large outer area exposed for the collection of sound and when not in use it can be folded each segment upon the other, so as to occupy but little space—that is to say, a trumpet such as illustrated in Figs. 1 to 4 would be suitable as an ear-trumpet.

I am aware that it has hitherto been proposed to form conical or pyramidal horns from cardboard provided with a linen foundation; but such horns have been made up from a single flat scored sheet or from a number of flat triangular strips having straight edges. Such horns could be developed or laid out upon a flat surface. Owing to their formation, if such horns were made collapsible they would have to be sustained in their conical form by additional sustaining means, or if they were made self-sustaining they could not be made collapsible. In contradistinction to this my collapsible horn could not be made up from a single flat sheet, as each strip has to be made with curved edges, and when the strips are flexibly secured together at such curved edges the whole or complete surface so formed cannot be laid out or developed on a flat surface. My horn, owing to the curvature of the edges of the strips, is self-sustaining and requires no additional stiffening or sustaining devices, although when it is desired to collapse the horn this may be effected by forcibly straightening and folding the strips one against the other in the manner hereinbefore described with reference to Figs. 2, 3, and 4. The horn when erected offers a decided resistance to such straightening or folding sufficient to render it self-sustaining against all ordinary shocks liable to be encountered; but it is found that when one strip has been forcibly straightened or folded against another the equilibrium of the trumpet is destroyed and the whole may be easily collapsed.

I do not limit the application of my invention to any particular method of building up the segments or to any special curve or con-

figuration of the same, and I vary the method of jointing and stiffening them to suit the material from which the strips are constructed and the foundation or base fabric upon which the flexible material forming the strips is secured.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges substantially as set forth.

2. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges and mounted on a flexible foundation, substantially as and for the purposes hereinbefore set forth.

3. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges, a flexible foundation for said strips and means for detachably securing the two extreme strips together, substantially as set forth.

4. A collapsible but self-sustained phonograph-horn, ear-trumpet or the like comprising a number of flexible strips having curved meeting edges, flexible connections between such edges and protecting means on the outer exposed edges, substantially as set forth.

5. A phonograph-horn, ear-trumpet or the like comprising a rigid conical tube and a collapsible trumpet-shaped mouth, the latter being made up of a number of flexible strips having curved meeting edges, and flexible connections at such edges, substantially as hereinbefore set forth.

6. A horn of the class described comprising a rigid conical tube, and a collapsible trumpet-shaped mouth made up of a number of flexible strips having curved meeting edges, said mouth being connected to said rigid conical tube, substantially as described.

7. A horn of the class described comprising a rigid conical tube, and a collapsible trumpet-shaped mouth made up of a number of flexible strips having curved meeting edges, said mouth being telescopically connected to said conical tube, substantially as described.

8. A phonograph-horn or the like comprising a number of flexed strips having curved meeting edges, and means joining said edges, said strips being so flexed and said edges so curved and joined that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges meet.

9. A phonograph-horn or the like comprising a number of strips each having a foundation or facing of linen or the like, said strips being so flexed and their edges so curved and joined that the horn is given a trumpet-like

or bell-like form, the strips forming angles where said edges join or meet.

10. A phonograph-horn comprising a number of strips joined or meeting at their edges, said strips being so flexed and said edges so curved that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges join, and protecting means on the outer exposed edges or ends of the strips.

11. A horn comprising a funnel-like portion and a trumpet-shaped mouth portion, the latter comprising a number of strips provided with means joining them at their edges, said strips being flexed and said edges curved so as to produce the trumpet form of said mouth portion, and said strips having angular relation to one another, substantially as described.

12. A phonograph-horn comprising a number of flexed strips having curved meeting edges, means joining said strips edge to edge, said strips being so flexed and said edges so curved and joined that the horn is given a trumpet-like or bell-like form, the strips forming angles where said edges meet, and

protecting devices applied upon the outer exposed edges or ends of the strips.

13. A phonograph-horn comprising a funnel-like portion and a mouth portion, the latter comprising a number of side portions extending lengthwise of the horn and joining one another at their borders, forming angles where joining, said sides so curved at their corner portions and so flexed as to give the mouth portion a trumpet-like or bell-like form, and their outer exposed ends being provided with protecting means. 30 35

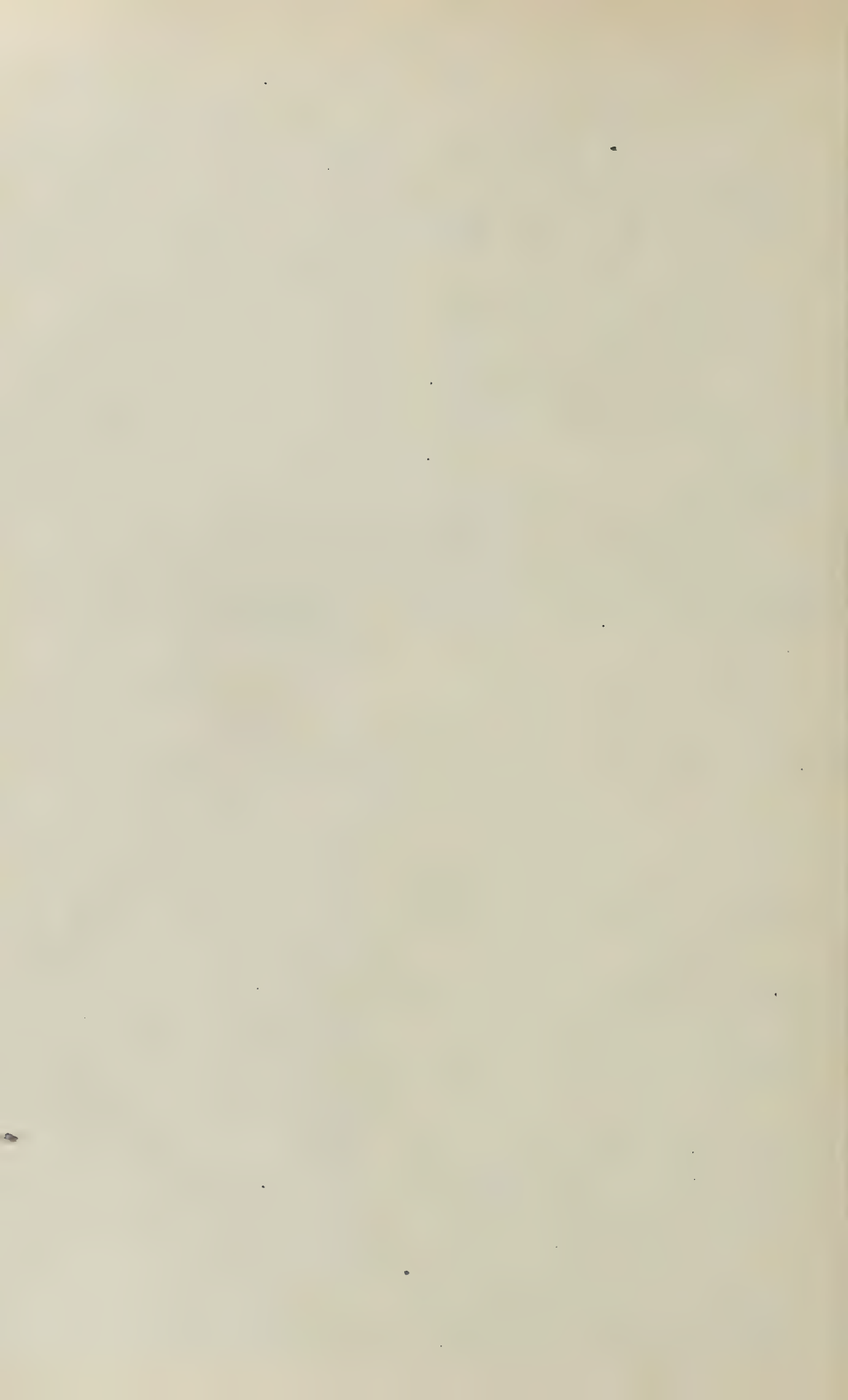
14. A horn comprising a funnel-like portion and a trumpet-shaped mouth portion, the latter comprising a number of strips or sides provided with means joining them at their edges, said strips being flexed and said edges curved so as to produce the trumpet form of said mouth portion, and said strips having angular relation to one another, and protecting means on the outer exposed edges or ends of the strips. 40 45

GUSTAVE HARMAN VILLY.

Witnesses:

DORA VILLY,

ROBERT MORRISON NEILSON.



[Endorsed]: District Court of the United States in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Villy Reissue Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Villy Reissue Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

No. 648,994.

Patented May 8, 1900.

M. D. PORTER.
COLLAPSIBLE ACOUSTIC HORN.

(Application filed July 31, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1

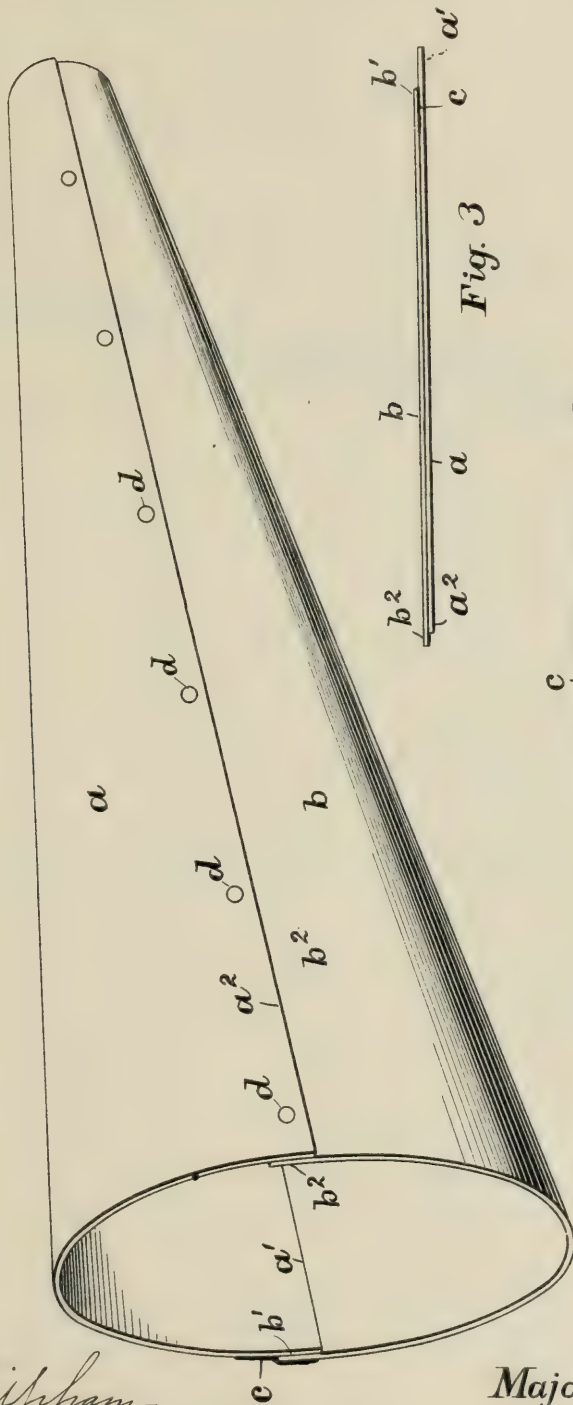


Fig. 3

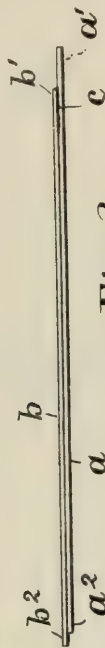
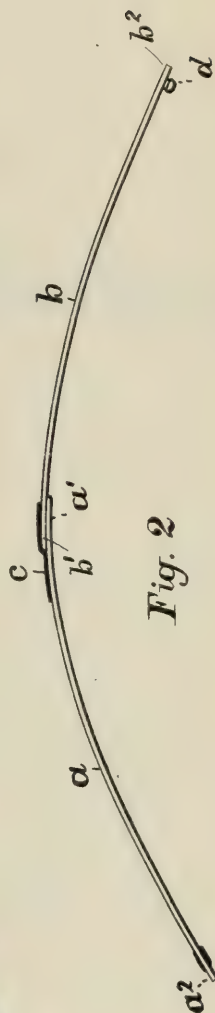


Fig. 2



Attest;

M. W. Liphman

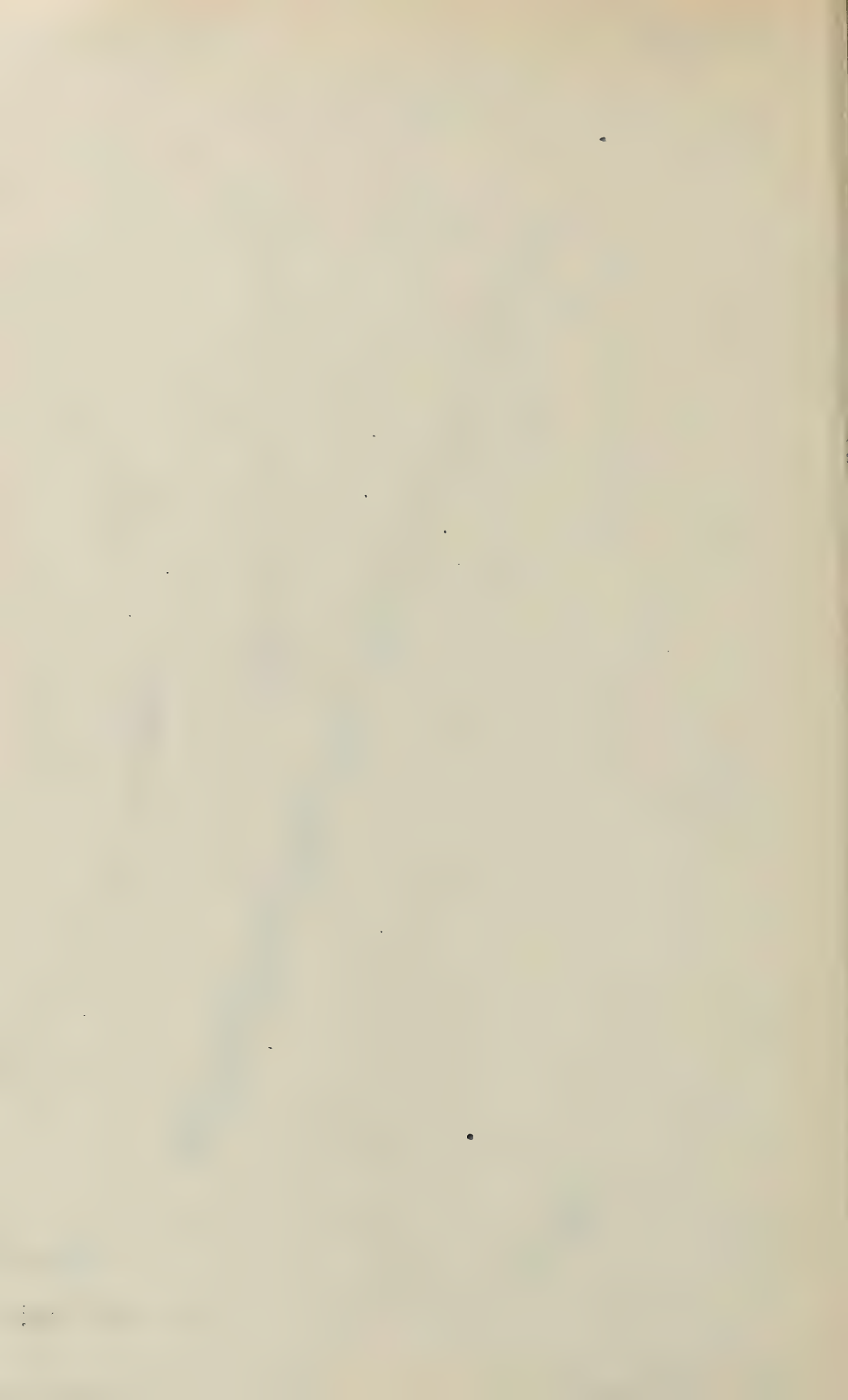
F. O. Haller

Inventor,

Major D. Porter;

By A. B. Liphman,

His Attorney.



M. D. PORTER.
COLLAPSIBLE ACOUSTIC HORN.

(Application filed July 31, 1899.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4

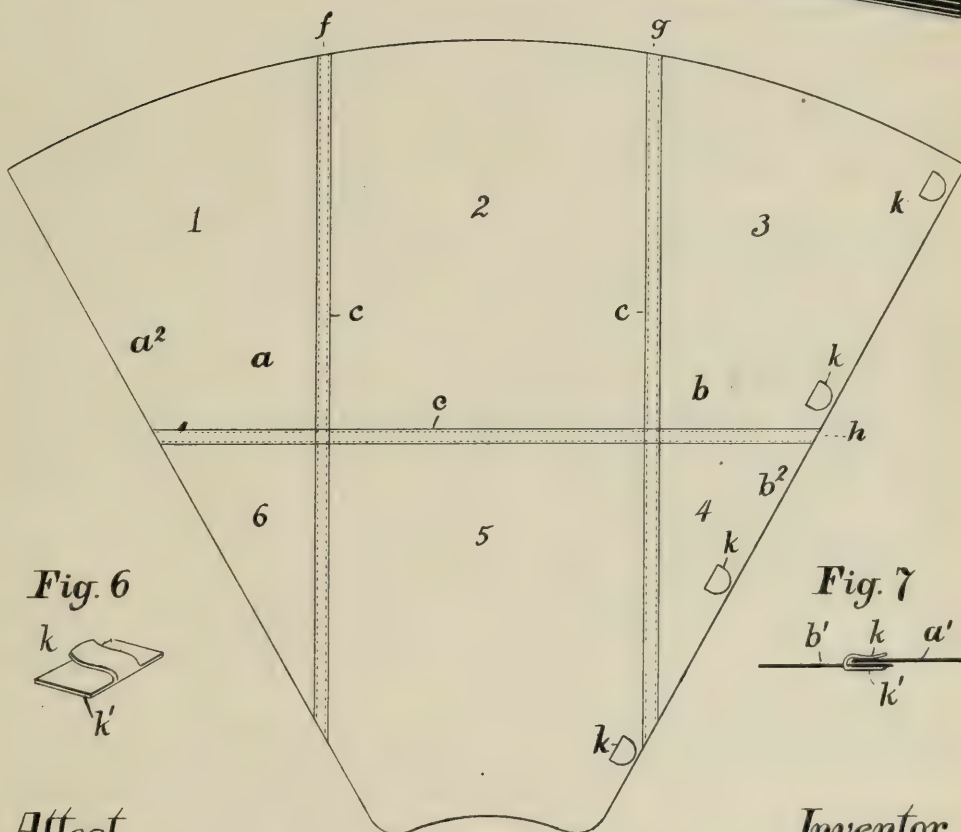
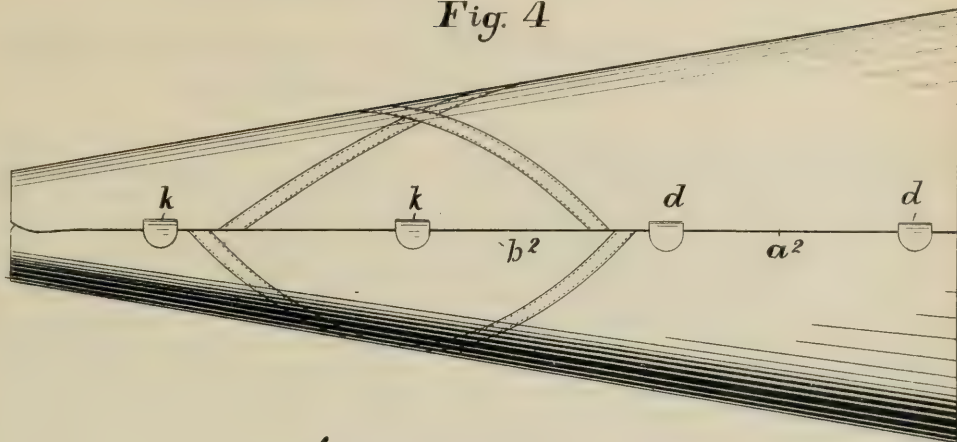


Fig. 6

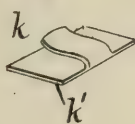


Fig. 7

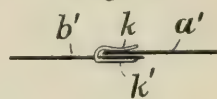


Fig. 5

Attest

M. W. Upham
F. E. Heller

Inventor,

Major D. Porter;

By A. B. Upham
His Attorney

MAJOR D. PORTER, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
INTERNATIONAL STYLOPHONE COMPANY, OF SAME PLACE.

COLLAPSIBLE ACOUSTIC HORN.

SPECIFICATION forming part of Letters Patent No. 648,994, dated May 8, 1900.

Application filed July 31, 1899. Serial No. 725,634. (No model.)

To all whom it may concern:

Be it known that I, MAJOR D. PORTER, a subject of the Queen of Great Britain, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Collapsible Acoustic Horn, of which the following is a full, clear, and exact description.

The object of this invention is the construction of a horn for general acoustic purposes, such as what is usually termed a "megaphone," or for phonographs and other talking-machines, which horn shall be capable of being folded into the smallest possible compass for greater convenience in transportation and storage, and yet can be immediately expanded into its perfect and normal condition for use. In accomplishing these results I form the horn from moderately-thin press-board, celluloid, or other material capable of ready, but not too easy, bending, and divide it longitudinally into two or more sections, with certain edges hinged together and the others provided with fastening devices easily engaged or disengaged. An ordinary hinged connection will not do for this purpose, however, as I have found from experiment, for the material being pliable only to a limited degree the hinges will become the apex of a somewhat-acute angle instead of an evenly-rounded curve. To remedy this defect in a simple and inexpensive manner, I form the hinge of some fabric or other pliable material and locate the same at some little distance back from the edge of one of the sections. By this means the outjutting edge serves as a fulcrum, which compels the material itself to bend instead of the hinge, and thereby gives to the horn the circular line in cross-section which is required.

Referring to the drawings forming part of this specification, Figure 1 is a perspective view of the horn embodying my invention. Fig. 2 is a transverse section of the same with the two sections thereof unfastened at one edge. Fig. 3 is a transverse section of said sections folded back to back. Fig. 4 is a side elevation of an improved form of my horn. Fig. 5 is a plan view of this latter horn laid flat. Fig. 6 is a perspective view of my preferred form of fastening for the edges of the

horn-sections, and Fig. 7 is a detail sectional view showing the manner in which the edges of the horn-sections are held by said fastening.

Turning to Fig. 1, it will be seen that the horn is composed of the two sections *a* and *b*, held together at the edges *a'* *b'* by a hinge *c*, preferably formed of fabric or leather. As shown, said edges overlap for a short distance, usually about half an inch, in order to preserve the true curve of the horn, as above set forth. For the same purpose the section edges *a''* *b''* are made to overlap for a similar distance and provided with fastenings *d* for securing them together. Such fastenings may be the common ball-and-socket devices used for gloves and purses, as indicated in the drawings. The hinge *c* is adapted to permit the two horn-sections to be folded back to back, as in Fig. 3, and thereby enable the same to lie perfectly flat.

In my preferred construction I divide the horn into six sections, as shown in Fig. 5, in order to enable the same to be folded into the smallest possible compass. The lines of severance for this purpose are three in number *f*, *g*, and *h*, *f* and *g* running parallel to each other and *h* at right angles with the others. The last of said lines of severance *h* is adapted to be folded in either direction, but the lines *f* *g* are hinged substantially like that of the construction illustrated in Figs. 1, 2, and 3.

The fastening devices for the edges *a''* *b''* are formed, as shown in Figs. 6 and 7, where the thin base *k'* is provided with the thin flattened hook *k*. Said base is affixed to the under side of the edge *b''*, preferably by being stitched thereto, with the hook *k* reaching through a slit therein to the upper surface thereof. (See Fig. 7.) The mouth of this hook is arranged, as in Fig. 7, in order to receive the edge *a'* of the opposite section, and the opening is slightly constricted to receive said edge quite tightly, and thereby securely retain it.

In knocking down this horn the edge *a'* is first withdrawn from the grip of the fastenings *k*, then the sections 1 and 6 are folded over upon the sections 2 and 5, then the sections 3 and 4 are brought over upon the first-named ones, and, finally, the superposed sections 4, 5, and 6 are folded over upon the

combined sections 1, 2, and 3. The entire horn now occupies a space covering no more area than the single section 2, with a thickness equal to the six layers of the material composing the horn. Thus reduced in dimensions the horn can be packed in a very small compass and is hence capable of being carried from place to place in a small grip, a coat-pocket, or similarly-convenient receptacle. While this perfectly adapts the horn for use as a megaphone easy to be carried about and yet ready for use at a moment's notice, my preferable or most valued use for the same is in connection with phonographs. By packing this horn within the case arranged for the phonograph the entire talking-machine is complete, and yet occupies substantially no more space than the sounder mechanism alone. This is a most convenient arrangement for those giving phonograph entertainments at private parties or elsewhere necessitating the machine's being carried from place to place.

What I claim as my invention, and for which I desire to secure Letters Patent, is as follows, to wit:

1. In a collapsible horn, the combination of the sections formed of resilient material and hinged together along a substantially-longitudinal line, said hinge being adapted to permit said sections to be folded back to back but will compel flexure of the material itself when the free edges of the sections are brought together to form the horn, and fastening devices for said free edges, substantially as set forth.

2. In a collapsible horn, the combination of the sections formed of resilient material and hinged together along a substantially-longitudinal line, said hinge being formed of flexible material affixed to the edge of one section and a short distance back of the corresponding edge of the other section, whereby such overlapping edge is adapted to compel flexure of the material composing said sections when they are brought into the desired conical

form, and fastening devices for the free edges of said sections, substantially as and for the purpose set forth.

3. In a collapsible horn, the combination of the sections formed of resilient material and hinged together along a substantially-longitudinal line, and the fastening devices for the free edges of said sections, said fastening devices comprising the thin flat hooks having the bases affixed to the edge of one of said sections and adapted to receive and retain the edge of the other section, substantially as set forth.

4. In a collapsible horn, the combination of the plurality of sections formed of resilient material and shaped as shown, the flexible hinges securing the same together, and the fastening devices for the free edges of said sections, substantially as set forth.

5. In a collapsible horn, the combination of the sections formed of material capable of moderately-resisting flexure, the dividing-line between said sections being substantially longitudinal, and means for securing together the edges of said sections, such means being adapted to compel flexure of the sections themselves and thereby preserve the true conical shape of the horn, substantially as and for the purpose set forth.

6. In a collapsible horn, the combination of the sections formed of resilient material, the flexible hinges uniting said sections, and the fastening devices for securing together the exposed edges of said sections, two of the division-lines of said sections being parallel and substantially longitudinal therewith and the other at right angles to said parallel lines, substantially as set forth.

In testimony that I claim the foregoing invention I have hereunto set my hand this 14th day of June, 1899.

MAJOR D. PORTER.

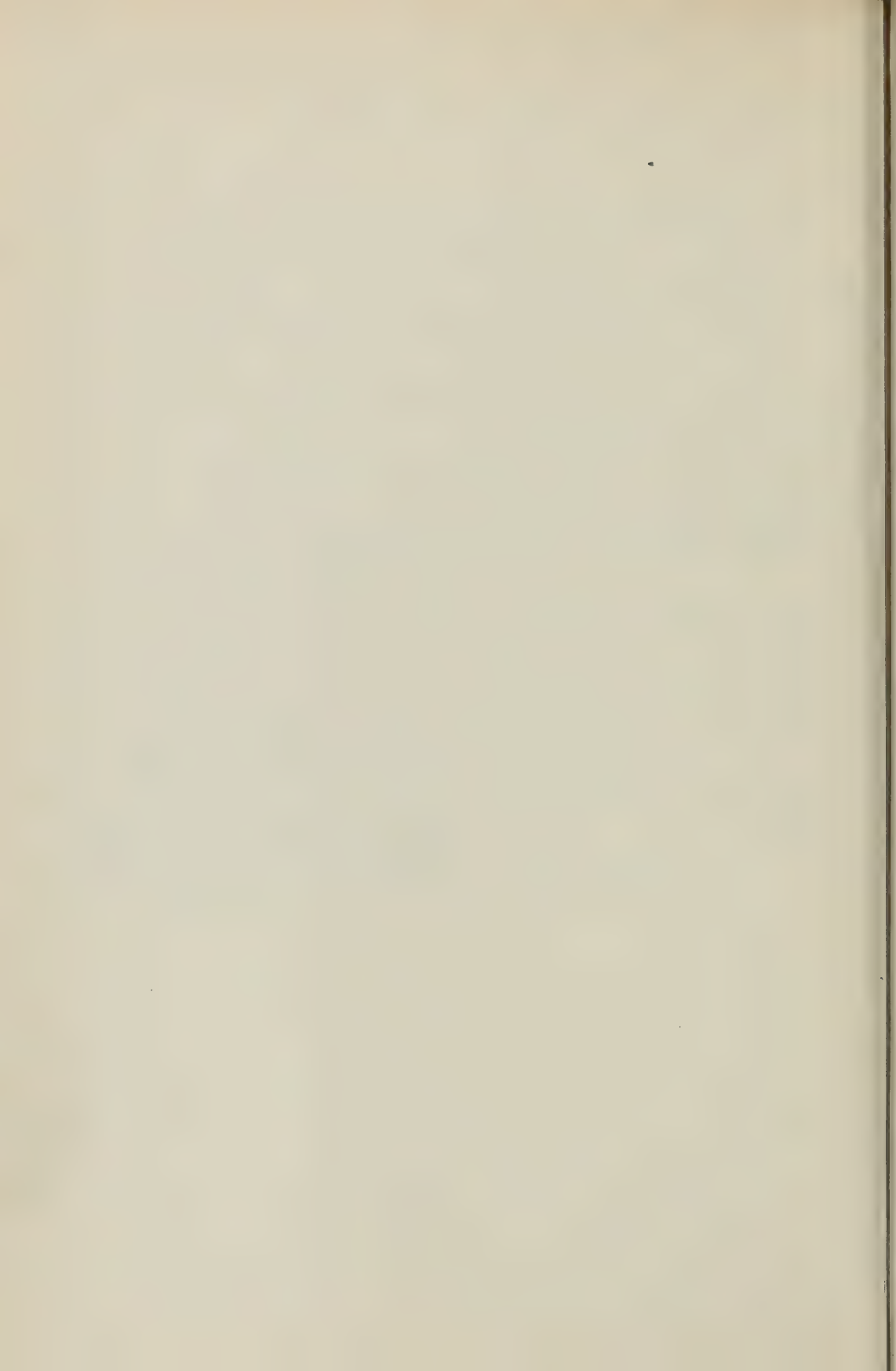
Witnesses:

GUY H. HOLLIDAY,
A. B. UPHAM.

[Endorsed]: District Court of the United States in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Porter Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Porter Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.



TRADE-MARK.

No. 31,772.

Registered July 5, 1898.

JOHN KAISER.

HORNS USED IN CONNECTION WITH SOUND PRODUCING DEVICES.

(Application filed Apr. 14, 1898.)

The "Kaiser Horn"



Witnesses
Edward L. ...
M. F. Keating

John Kaiser
 My Attorney
Charles ...



UNITED STATES PATENT OFFICE.

JOHN KAISER, OF NEW YORK, N. Y.

TRADE-MARK FOR HORNS USED IN CONNECTION WITH SOUND-PRODUCING DEVICES.

STATEMENT and DECLARATION of Trade-Mark No. 31,772, registered July 5, 1898.

Application filed April 14, 1898.

STATEMENT.

To all whom it may concern:

Be it known that I, JOHN KAISER, a citizen of the United States, residing at New York, in the county of New York and State of New York, and doing business at No. 110 Fifth avenue, in said city; have adopted for my use a Trade-Mark for Phonograph, Graphophone, or Gramophone Horns, of which the following is a full, clear, and exact specification.

My trade-mark consists of the words "The Kaiser Horn," arranged above a phonograph, graphophone, or gramophone horn suspended from a tripod-support. These have generally been arranged as shown in the accompanying facsimile, which represents a phonograph, graphophone, or gramophone horn yieldingly suspended from a stand. Above the horn appear the words "The Kaiser Horn" in ornamental letters; but the style of lettering is unimportant, the essential feature of my trade-mark being the words "THE KAISER HORN," arranged above a phonograph, gramophone, or graphophone horn suspended from

a tripod-support, substantially as shown in the accompanying facsimile.

This trade-mark I have used continuously in my business since September 1, 1897.

The class of merchandise to which this trade-mark is appropriated is phonograph, graphophone, gramophone, or sound-reproducing devices, and the particular description of goods comprised in said class upon which I use it is the horn or horns utilized in connection with such instruments for magnifying or intensifying the sounds as reproduced.

It has been my practice to apply my trade-mark by printing the same upon suitable labels, generally in black colors, inclosing one of such labels with each horn and its supporting-stand for shipment. I have also used it in catalogues describing the goods and upon letter-heads.

JOHN KAISER.

Witnesses:

C. J. KINTNER,
M. F. KEATING.

DECLARATION.

State of New York, county of New York, ss.

JOHN KAISER, being duly sworn, deposes and says that he is the applicant named in the foregoing statement; that he verily believes that the foregoing statement is true; that he has at this time a right to the use of the trade-mark therein described; that no other person, firm, or corporation has the right to such use, either in the identical form or in any such near resemblance thereto as might be calculated to deceive; that it is used by him in commerce between the United States and

foreign nations or Indian tribes, and particularly with Canada and Great Britain; and that the description and facsimiles presented for record truly represent the trade-mark sought to be registered.

JOHN KAISER.

Sworn and subscribed to before me this 13th day of April, 1898.

[L. S.] CHARLES J. KINTNER,
Notary Public, N. Y. Co., New York.

[Endorsed]: District Court of the United States in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Kaiser Trademark. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit of Appeals for the Ninth Circuit. Defendant's Exhibit Kaiser Trademark. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

[Defendant's Exhibit—French Letters Patent No.
318,742.]

RÉPUBLIQUE FRANCAISE.

OFFICE NATIONAL DE LA PROPRIÉTÉ INDUSTRIELLE.

BREVET D'INVENTION

du 17 février 1902.

XII. — Instruments de précision.

N° 318742

2. — APPAREILS DE PHYSIQUE ET DE CHIMIE.

Brevet demandé le 17 février 1902 par **M. TURPIN**, pour un système de cornet en bois pour phonographe. (Délivré le 4 juillet 1902; publié le 25 octobre 1902.)

PRINCIPE :

Jusqu'ici les cornets des phonographes servant, soit à l'enregistrement, soit à la reproduction, sont de quatre espèces :

- 5 1° En carton;
- 2° En celluloïd;
- 3° En verre ou en cristal;
- 4° En métal : cuivre, fer-blanc, nickel, aluminium, maillechort, etc.

10 Le carton, le celluloïd ou fibroïne, ne donnent que de très mauvaises vibrations. Le cristal n'a pas eu de succès parce que les vibrations sont trop aiguës et que les cornets sont trop lourds et trop fragiles.

15 Les cornets en métal sont, en somme, les seuls employés.

Ces cornets donnent, quoi que l'on fasse, des sons métalliques nasillards qui enlèvent tout l'intérêt que pourrait avoir le phonographe en lui-même, car il est impossible de reconnaître les voix enregistrées, parce que les sons sont dénaturés. C'est ainsi que le violon ne peut être rendu convenablement par un phonographe; que les notes élevées d'une
25 bonne chanteuse légère sont dénaturées et accompagnées d'un sifflement métallique qui trouble l'ensemble, que les morceaux d'orchestre sont confus, etc.

30 Tous ces inconvénients qui nuisent absolument à la phonographie et qui ont empêché que le phonographe, remarquable à plus d'un point de vue, ne prenne le caractère sérieux et scientifique qu'il devrait avoir, sont dus à la

nature métallique des cornets qui transforment en une voix métallique la voix la plus pure, 35 d'abord à l'enregistrement et, ensuite, à la reproduction, d'où, finalement, une voix de polichinelle sur tous les tons et pour toutes les voix.

Comme conséquences de cet état de choses, 40 le phonographe restant un simple et souvent désagréable joujou, au lieu d'être un appareil reproduisant fidèlement les sons tels qu'il les aurait reçus, c'est-à-dire un instrument parfait permettant de reconnaître facilement les voix 45 enregistrées.

En recherchant les causes de cette grave et perturbante défectuosité, j'ai été frappé, dès le début de mes recherches, que l'on se soit ingénié, en effet, à faire passer une magnifique 50 voix de cantatrice ou de ténor, dans un cor de chasse ou dans une trompette, pour enregistrer, d'abord et, ensuite, pour reproduire les morceaux de chant. L'effet obtenu, d'une manière continue et sans désespérer, c'est-à-dire sans 55 y avoir remédié depuis l'invention du phonographe, ne pouvait rien avoir de surprenant si on étudie scientifiquement le sujet.

Il est bien évident qu'un solo de violon, de violoncelle, de hautbois ou de voix humaine, 60 étant émis dans une trompette et reproduit à l'aide d'une trompette métallique, sera complètement perdu et dénaturé par la discordance des vibrations et la cacophonie qui résultent des vibrations asynchrones qui se produisent. 65

Ce fait étant établi, par mes expériences,

j'ai recherché comment on pourrait obvier à ces défauts, et après avoir essayé différents systèmes j'ai reconnu que le bois convenablement travaillé et choisi pouvait remédier à la défectuosité des phonographes actuels et rendre ces appareils parfaits. Le bois, en effet, donne des vibrations si naturelles qu'il s'accorde avec tous les instruments et surtout avec la voix humaine qu'il permet d'enregistrer et de rendre avec une douceur, une netteté et une fidélité extrêmes et les nuances les plus délicates. On sait, en effet, que les instruments en bois, soit à cordes, soit à vent, sont ceux qui se rapprochent le plus de la voix humaine, tels sont le violon, le violoncelle, le hautbois, etc. Le bois est donc de toutes les matières celle qui convient le mieux à la confection d'un cornet phonographique, comme je l'ai reconnu.

D'ailleurs, je ferai remarquer ici, et c'est très important, au point de vue du principe, que dans l'industrie des phonographes on n'a pas l'air de se préoccuper d'obtenir des sons purs et mélodieux, mais seulement beaucoup de bruit. Du bruit, c'est à quoi visent tous les cornets en fer-blanc, en aluminium, etc. On ne s'est occupé de leur forme en trompette ou en cor de chasse qu'en vue d'obtenir plus de force. Seulement au fur et à mesure que le bruit augmente, les sons nasillards et métalliques augmentent aussi et à tel point que dans un morceau d'orchestre on distingue seulement les gros instruments de cuivre tandis que tous les instruments délicats, violons, harpes, violoncelles, hautbois, etc., se confondent en un sifflement désagréable et comparable à une machine qui grippe, à tel point que l'on croit, lorsque l'oreille n'y est pas faite, que c'est le mécanisme du phonographe qui en est cause.

Un appareil, même très ordinaire, muni d'un cornet en bois de mon système, donne un enregistrement et une reproduction très supérieurs à ceux obtenus avec des cornets métalliques.

Les sons émis par les instruments de cuivre, au lieu d'être évalués comme avec un cornet métallique, sont rendus fidèlement, plutôt un peu adoucis en laissant dominer le chant.

Tels sont les principes, études et observations qui m'ont amené à appliquer le bois de la manière suivante, à l'industrie des phonographes.

PROCÉDÉS DE CONSTRUCTION

Pour que les cornets en bois donnent satisfaction il faut qu'ils soient en bois très nunes et très secs, convenablement choisis et travaillés. Les formes convenables ainsi que la légèreté de l'appareil présentent de grandes difficultés que j'ai tournées de la manière suivante.

1° Cornets en bois tourné.

Ce genre de cornets, le premier qui se présente à l'esprit, est très difficile à obtenir à cause des grandes dimensions et du peu d'épaisseur nécessaires qu'il faut attendre. Outre tous les bois ne permettent pas d'arriver au résultat. L'acajou, le palissandre, l'acacia, le noyer sont chers, on les trouve difficilement en gros blocs et ils sont cassants. Le bois blanc se désagrège, le hêtre ou le tulipier d'Amérique donnent les meilleurs résultats.

Pour obtenir un cornet tourné, on commence par tourner l'extérieur du bloc de bois à la forme voulue, puis on ébauche l'intérieur suivant le profil extérieur désiré. Ensuite on fixe la pièce ainsi préparée à l'extérieur et ébauchée à l'intérieur, B, dans un mandrin en bois ou en métal *ad hoc* M (fig. 1), destiné à maintenir les parois du cornet, pendant que l'on finit, au tour, l'intérieur, afin d'éviter qu'il se déforme et se brise sous l'effort de l'outil. Malgré ces précautions on en perd beaucoup et il y a une grande dépense de bois perdu.

Ces difficultés m'ont engagé dans une autre voie, celle d'employer du bois de placage en feuilles tranchées ou sciées. Les bois ainsi préparés m'ont permis d'établir des types d'études très pratiques à l'aide des modes et moyens de construction que j'ai combinés. Les bois que j'emploie sont le palissandre, l'acajou, l'acacia, le tulipier à violon, guitare, mandoline, etc., le noyer, le hêtre. Ces bois peuvent être employés seuls ou mélangés, soit par contre-placage à fils croisés, soit par assemblage de lames. Les épaisseurs peuvent varier de un demi-millimètre à cinq millimètres, exceptionnellement pour les grandes dimensions.

2° Cornets en bois de placage d'une seule pièce
(fig. 2, 3, 4, 5, 6 et 7).

Si on veut un cornet d'une seule pièce, on trace suivant le cône désiré une développante dudit cône (fig. 2 en réduction) pour en tirer un calibre ou gabarit en métal : zinc, cuivre,

[318742]

APPAREILS DE PHYSIQUE ET DE CHIMIE.

3

etc., qui sert ensuite à tracer les feuilles de placage que l'on superpose en grand nombre, 25, 30 ou 50, suivant l'épaisseur, et que l'on découpe à la scie à ruban ou autre.

- 5 Les pièces ainsi découpées sont plongées dans l'eau bouillante ou mieux dans une étuve à vapeur très humide et à basse pression, 1 kilogramme et demi tout au plus, pendant une heure environ. Dans ce temps le bois est devenu extrêmement mou et souple. Vivement, 10 alors, on saisit chaque pièce découpée et ramollie, B, que l'on enroule sur elle-même, dans le sens voulu, et on l'enfile sur un moule ou forme F, analogue aux formes à pains de 15 sucre, et sur cette feuille de bois B, on applique, de suite, une autre forme F pour maintenir B, jusqu'à complet refroidissement. On superpose ainsi un plus ou moins grand nombre de feuilles de bois ramolli et de formes, 20 à volonté. Les formes doivent être chauffées dans l'eau bouillante préalablement; elles sont en métal tourné sur les deux faces qui servent toutes deux. On les prend à la main par une traverse réservée ou rivée dans le métal (fig. 3 25 et 4). Lorsque tout est refroidi on démoule les pièces et on procède au collage latéral C, par recouvrement à l'aide d'une colle forte de bonne qualité. On maintient le collage soit à la presse, soit sous des formes analogues aux 30 formes F, mais en toile métallique pour laisser l'air circuler et faciliter le séchage. Ensuite, après séchage on fixe le cône creux en bois ainsi obtenu dans l'embouchure métallique E, soit de préférence par collage, soit par clouure 35 (fig. 5, 6 et 7, vues en bout et en coupe de l'embouchure). Enfin on polit la pièce et on la vernit à la gomme laque, à la manière des luthiers. Le vernis augmente la sonorité et préserve le bois. On a ainsi un cornet instrumental et non pas un simple cornet-conducteur 40 du son.

3° Cornets en bois de placage en plusieurs pièces.

- La figure 8 représente un cornet en bois, 45 de forme polygonale (octogone) qui est construit par lames B, clouées et collées, ou l'un ou l'autre, sur des baguettes de bois A (fig. 9 et 12, vue en bout) servant d'armature ou de carcasse. La pyramide tronquée ainsi 50 obtenue est ensuite collée en C dans une embouchure E en métal quelconque. On termine ensuite l'objet, comme il a été dit plus haut.

En place d'armatures en bois on peut faire usage d'armatures métalliques A (fig. 10, 11 et 13) pour recevoir et maintenir les feuilles 55 ou lames de bois B. Ces armatures peuvent être, à l'intérieur ou à l'extérieur du cornet, lequel peut varier de formes, depuis la forme circulaire (cône) jusqu'au carré en passant par toutes les formes pyramidales à côtés mul- 60 tiples.

Les figures 14, 15 et 16 représentent un cornet, tronconique, à courbure en pavillon; avec armature métallique. Une couronne re- 65 pliée A forme l'armature du pavillon dans 65 laquelle s'engagent les lames de bois B; l'embouchure E porte une enveloppe isolée concentrique, mais soudée à sa base. Dans l'espace réservé entre les parois doubles ainsi formées (fig. 16), on engage et on colle le sommet du 70 cône en bois B, la base étant fixée dans la couronne de pavillon. Pour maintenir la courbure, on peut engager à l'extérieur un anneau métallique ou autre, O, relié à l'embouchure E par des tiges T soudées, collées ou rivées, en S 75 et en O. Les feuilles de placage ainsi maintenues peuvent affecter les formes désirées, en faisant varier la forme des carcasses et armatures et le tracé des lames de bois. Les joints, si besoin en est, sont fermés avec des bandes 80 de placage extrêmement minces et collées.

4° Cornets en bois combinés.

Pour obtenir une concordance des sons plus complète par synchronisme et isochronisme, on peut composer avantageusement les cornets, 85 de lames de bois d'essences diverses et même y ajouter une ou deux lames de métal et même de verre, de manière que lorsque l'on enregistrerait un morceau d'orchestre, tous les instruments trouvaient leurs harmoniques et 90 que le cornet puisse vibrer à l'unisson. Si, par exemple, le cornet est une pyramide duodécagonale, soit à 12 lames, on pourrait mettre en opposition.

- 2 lames en palissandre, 95
- 2 lames de métal qui peuvent être composées de bandes de métaux divers,
- 1 lames de verre,
- 2 lames de tulipier,
- 2 lames d'acajou rouge, 100
- 2 lames de noyer.

On obtiendrait ainsi un cornet orchestral idéal.

4

APPAREILS DE PHYSIQUE ET DE CHIMIE.

[318742]

Pour la voix et le chant, le violon, les instruments de bois; il ne faut mettre que du bois, mais varier les espèces, ce que permet la forme polygonale de mes cornets.

5 On conçoit, en effet, que tous les bois ne vibrent pas également. Ainsi le noyer et le hêtre rendent très bien les sons graves; le tulipier et les bois blancs, les médiums, et l'acajou et le palissandre les notes élevées. Ces
10 différents bois se soutiennent entre eux et renforcent les sons en vibrant à l'unisson de leurs harmoniques comme les cordes d'un piano ou d'une harpe.

15 Tels sont les perfectionnements et procédés que j'entends breveter par les présentes.

REVENDEICATIONS.

En conséquence, je revendique pour une période de quinze années :

1° L'application industrielle des bois divers
20 à la confection spéciale des cornets pour phonographes, en conséquence des principes, études et observations et avantages particuliers que j'ai fait connaître ci-dessus et dans le but
spécifié.

Notamment, la conservation du timbre de 25 la voix ou de l'instrument;

2° Les moyens de construction desdits cornets, à l'aide du tour et mandrins, comme ci-dessus décrit et dans le but spécifié;

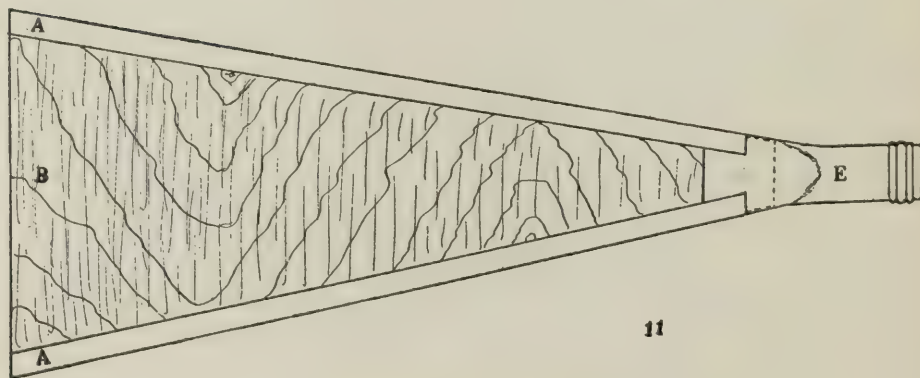
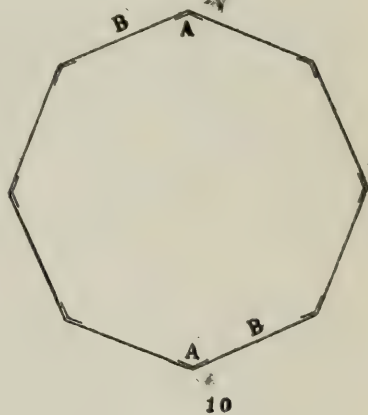
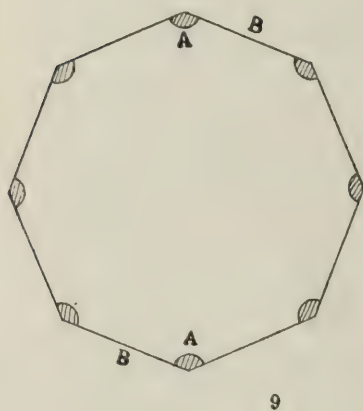
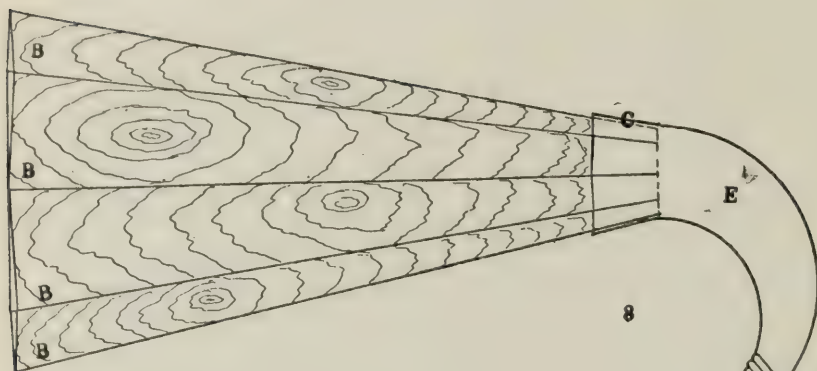
3° Les procédés de construction et façon- 30 nement de cornets d'une seule pièce à l'aide de bois de placage ramolli à la vapeur d'eau et de moulage et appareils et lesdits appareils, comme ci-dessus décrit et dans le but spécifié;

4° Les procédés de confection desdits cor- 35 nets à l'aide de bois de placage débités en lames et fixées sur des armatures en bois ou en métal quelconque, internes ou externes, quelles qu'en soient les formes et dimensions, comme ci-dessus décrit et dans le but spécifié; 40

5° Les procédés de construction et de combinaison des cornets combinés, ces cornets eux-mêmes, à plusieurs bois différents, avec ou sans verre ou métaux à vibrations, comme ci-dessus décrit et dans le but spécifié. 45

Février 1902.

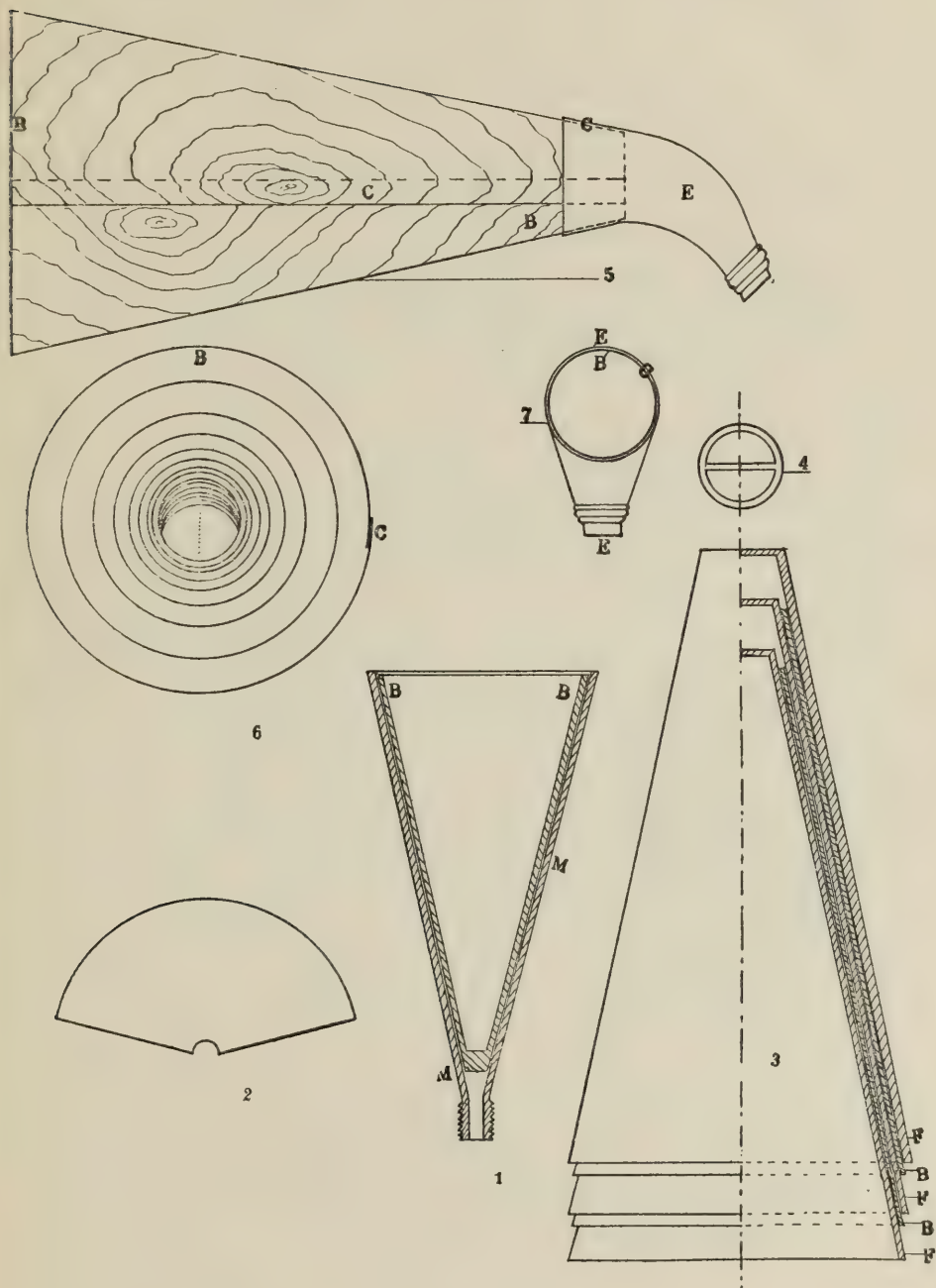
Eug. TURPIN.



N° 318742

M. Turpin

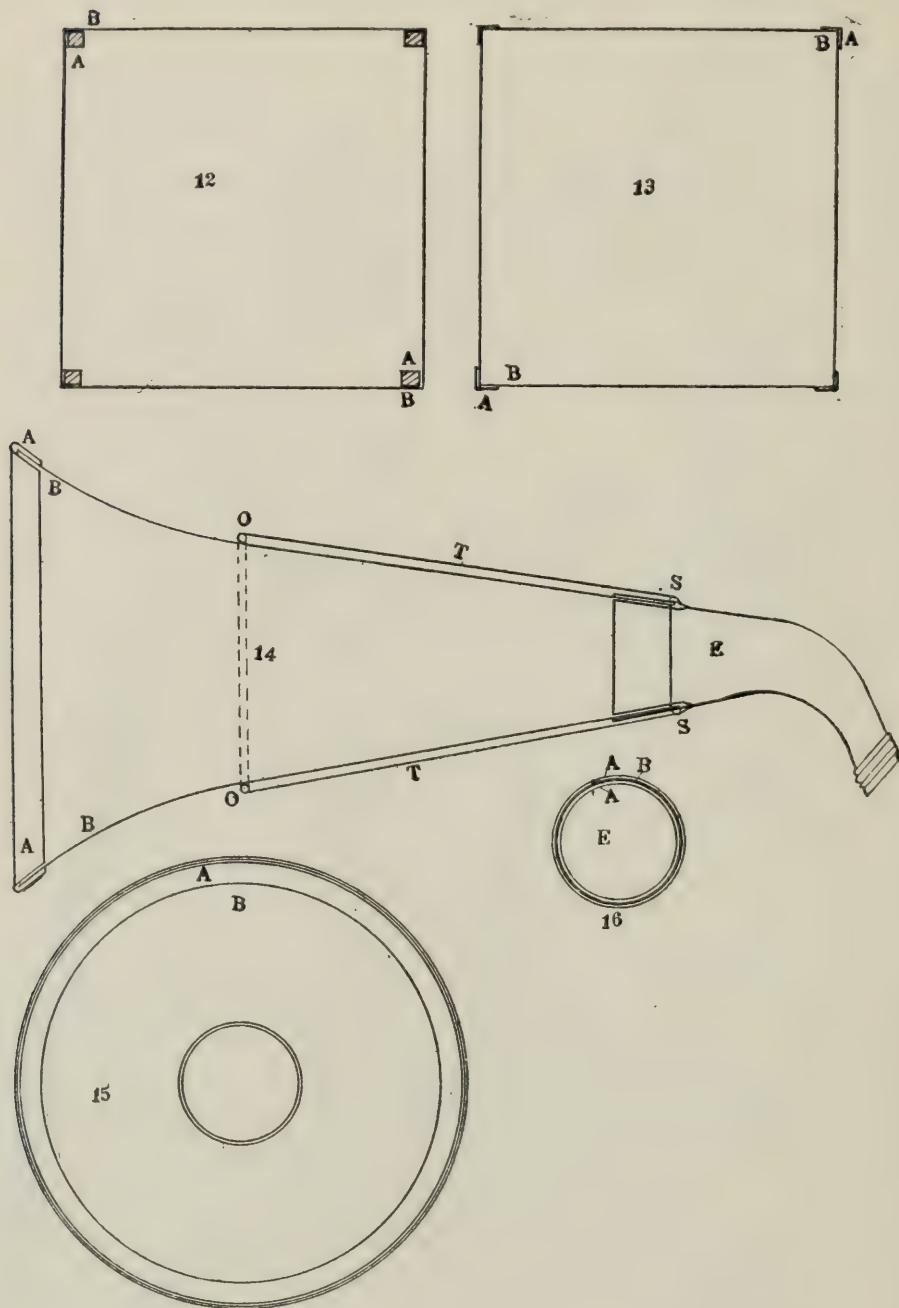
3 planches. — Pl. I



N° 318742

M. Turpin

3 planches. — Pl. III



FRENCH REPUBLIC.
NATIONAL OFFICE OF INDUSTRIAL PROP-
ERTY.

PATENT OF INVENTION

of February 17, 1902.

XII.—Instruments of Precision. No. 318,742.

2.—Physical and chemical apparatus.

Patent applied for February 17, 1902, by M. Turpin,
for a design for a horn of wood for a phono-
graph. (Delivered July 4, 1902; published Oc-
tober 25, 1902).

PRINCIPLE.

Heretofore horns for phonographs serving either
for recording or for reproduction have been of four
kinds:

- 1st. Of pasteboard;
- 2nd. Of celluloid;
- 3rd. Of glass or of crystal;
- 4th. Of metal; copper, tin, nickel, aluminum,
German silver, etc.

Pasteboard, celluloid or fibre give only very bad
vibrations. Crystal has not been successful because
the vibrations are too sharp, and the horns are too
heavy and too fragile.

Horns of metal are, in short, the only ones em-
ployed.

These horns give, whatever one may do, metallic,
nasal sounds which take away all interest which the
phonograph might have in itself, for it is impossible

to recognize the recorded sounds, because the sounds are unnatural. It is thus that the violin cannot be suitably reproduced by a phonograph; that the high notes of a good light singer are unnatural and accompanied by a metallic hissing which disturbs the ensemble, that orchestral pieces are confused, etc.

All these disadvantages which absolutely harm the phonograph and which have prevented the phonograph, which is remarkable from more than one point of view, from acquiring the serious and scientific character which it ought to have, are due to the metallic nature of the horns which transform into a metallic sound a sound the most pure, first in the recording and then in the reproduction, whence finally into a sound of mockery for all tones and for all sounds.

As a consequence of this state of things, the phonograph remains a simple and often disagreeable toy, instead of being an apparatus faithfully reproducing sounds such as it may have received, that is to say a perfect instrument permitting easy recognition of the recorded sounds.

In searching for the causes of this serious and disturbing defectiveness, I have been surprised from the beginning of my researches, that one may try in vain, to cause a magnificent voice of a singer or tenor to pass in a hunting horn or in a trumpet first for the recording and then for the reproducing of the pieces of song. The effect obtained, in a manner continued and without change, that is to say without having remedied it since the invention of

the phonograph can have nothing of surprise if one studies the subject scientifically..

It is very evident that a solo of a violin, of a violoncello, of an oboe or of the human voice, being emitted into a trumpet and reproduced by the aid of a metallic trumpet, will be completely lost and rendered unnatural by the discord of the vibrations and want of harmony which result from the asynchronous vibrations which are produced.

This fact being established, by my experiences, I have sought how one could obviate these defects, and after having tried different plans I have observed that wood suitably worked and selected can remedy the defectiveness of the present phonographs and render these instruments perfect. Wood, indeed, gives vibrations so natural that it accords with all instruments and above all with the human voice which it permits to be recorded and to be reproduced with a softness, a clearness and an extreme fidelity and the most delicate shades. One knows, indeed, that instruments of wood, whether string instruments or wind instruments, are those which approach the most to the human voice. Such are the violin, the violoncello, the oboe, etc. Wood is then of all materials that which conforms the best to the composition of a phonographic horn, as I have observed.

In addition, I would remark here, and it is very important, from the point of view of the principle, that in the phonograph industry one does not pretend to attempt to obtain sounds pure and melodious, but only much noise. Noise, that is what all

horns of tin, of aluminum, etc., aim at. One is concerned with their form, as a trumpet or hunting horn, only with a view of obtaining more force. Only in proportion as the noise increases do the nasal and metallic sounds also increase and to such a point that in an orchestral piece one distinguishes only the large instruments of copper while all the delicate instruments, violins, harps, violoncellos, oboes, etc., are confused in a hissing that is disagreeable and comparable to a machine that catches, to such a point that one thinks, when the ear is not accustomed to it, that it is the mechanism of the phonograph which is the cause of it.

An apparatus, even very ordinary, provided with a horn of wood of my design, gives a recording and a reproduction very superior to those obtained with metallic horns.

The sounds emitted by instruments of copper, instead of being elevated as with a metallic horn, are rendered faithfully, rather a little softened, permitting the song to dominate.

Such are the principles, studies and observations which have led me to apply wood in the following manner to the phonograph industry.

PROCESS OF CONSTRUCTION.

In order that horns of wood may give satisfaction it is necessary that they be of wood very thin and very dry, suitably selected and worked. The suitable forms as well as the lightness of the apparatus present great difficulties which I have resolved in the following manner:

1st. Horns turned in wood.

This kind of horns, the first which presents itself to the mind is very difficult to obtain because of the large dimensions and of the small thickness which it is necessary to attain. Besides all woods do not permit of obtaining the result. Mahogany, rosewood, acacia and walnut are dear, one finds them difficult in large blocks and they are fragile. White wood disintegrates, the beech or the tulip of America gives the best results.

In order to obtain a turned horn, one begins by turning the exterior of the block of wood to the form desired, then one fashions the interior following the exterior outline desired. Then one fixes the piece B, thus prepared on the exterior and fashioned on the interior, in a mandrel M (fig. 1) of wood or of metal for this purpose, intended to maintain the walls of the horn while one finishes it in turn on the interior, in order to avoid deformation and breaking under the effort of the tools. Notwithstanding these precautions one loses many of them and there is a great expense for wood lost.

These difficulties engaged me in another way, that of employing wood for veneering cut or sawed into sheets. Woods thus prepared have permitted me to construct types for study very practical by the aid of methods and means of construction which I have combined. The woods which I employ are rosewood, mahogany, acacia, tulip used for the violin, guitar, mandolin, etc., walnut, and beech. These woods can be employed alone or mixed either by counter-veneering in cross order or by the assem-

blage of strips. The thickness may vary from a one-half mm. to 5mm. used exceptionally for large dimensions.

2nd. Horns of wood for veneering in a single piece (fig. 2, 3, 4, 5, 6, and 7).

If one wishes a horn of one piece, one spreads out according to the cone desired, an unfolded pattern of the cone (fig. 2 on a small scale) in order to obtain therefrom a caliber or model in metal, zinc, copper, etc., which then serves for outlining the sheets for veneering which one superimposes in great number, 25, 30 or 50, according to the thickness, and which one cuts out with a ribbon or other saw.

The pieces thus cut out are immersed in boiling water or rather in a steam-oven very humid and of low pressure, one kilogram and a half in all at the most, for about an hour. During this time the wood becomes extremely soft and supple. Quickly then one takes each cut and softened piece, B, which one folds upon itself, in the manner desired, and one places it on a mold or form F. similar to forms for sugar-bread, and upon this sheet of wood B one applies then another form F in order to maintain B until complete cooling. One super-imposes thus a more or less large number of sheets of softened wood and of forms as desired. The forms should be heated in boiling water, preferably; they are of metal turned upon the two faces both of which are used. One takes them in the hand by a cross-piece left or riveted in the metal (fig. 3 and 4). When all is cold one takes the pieces from the molds and proceeds to the lateral joint C securing it by means of a

strong glue of good quality. One maintains the joint either by pressure or under forms similar to forms F, but of metal cloth in order to let the air circulate and to facilitate the drying. Then after the drying one secures the hollow cone of wood thus obtained in the metallic mouth-piece E, either preferably by gluing or by nailing (fig. 5, 6 and 7, end and foreshortened views of the mouth-piece). Finally one polishes the piece and varnishes it with a shellac, in the manner employed by instrument makers. The varnish increases the sonorousness and preserves the wood. One has then an instrumental horn and not a simple horn, that is a conductor of sound.

3rd. Horns of wood for veneering in several pieces.

Figure 8 represents a horn of wood, of polygonal form (octagonal) which is constructed of strips B, nailed and glued, or one or the other, upon ribs of wood A (figs. 9 and 12, end views) serving as bracers or as a skeleton. The truncated pyramid thus obtained is then glued at C in a mouth-piece E of any metal. One then finishes the matter in the manner which has been set forth above.

In place of ribs of wood one can make use of metallic ribs (figs. 10, 11 and 13) to receive and maintain the sheets or strips of wood B. These ribs may be on the interior or on the exterior of the horn, which may vary in form, from the circular form (cone) to that of a square, passing through all the pyramidal forms having a plurality of sides.

Figures 14, 15 and 16 show a truncated bell-shaped horn, with metallic bracing. A folded ring A forms

the bracing of the bell in which the strips of wood B are engaged; the mouth-piece E carries a concentric envelope, detached but soldered at its base. In the space reserved between the double walls thus formed (fig. 16), the top of the cone of wood B is engaged and glued, the base being secured in the bell ring. To maintain the curvature, one may secure to the exterior a metallic or other ring O, connected to the mouth-piece E by rods T, soldered, glued or riveted at S and at O. The sheets of veneering, thus maintained, can effect the forms desired, by varying the form of the skeleton and ribs and shape of the sheets of wood. The joints, if there is need of it, are secured by bands of veneering wood very thin and glued.

4th. Horns of woods combined.

In order to obtain a more complete concordance of the sounds by synchronism or isochronism, one may advantageously construct the horns or strips of wood of different kinds and also add thereto one or two strips of metal and also of glass, so that when one records an orchestral piece, all the instruments find their harmonies and that the horn can vibrate in unison. If, for example, the horn is a duo-decagonal pyramid, that is with 12 strips, one may put in opposition:

2 strips of rosewood;

2 strips of metal which may be composed of bands of different metals;

2 strips of glass;

2 strips of tulip;

2 strips of red mahogany;

2 strips of walnut.

One obtains thus an ideal orchestral horn.

For the voice and the song, the violin, the instruments of wood, it is necessary not only to employ wood, but to vary the kinds, which the polygonal form of my horns permits.

One understands, indeed, that all the woods do not vibrate equally. Thus the walnut and the beech render very well the grave sounds; the tulip and the white woods, the medium, and the mahogany and the rosewood the high notes. These different woods keep up among them and reinforce the sounds in vibrating in unison with their harmonics like the strings of a piano or of a harp.

Such are results and methods which I intend to patent by these presents.

CLAIMS.

Therefore, I claim for a period of fifteen years:

1st. The industrial application of different woods to the special construction of horns for phonographs, according to the principles, studies and observations and particular advantages which I have set forth above and finally specified.

Especially the conservation of the quality of the voice and of the instrument.

2d. The means of construction of said horns, by the use of a turning lathe and mandrels, as above described and finally specified.

3d. The methods of construction and fashioning of horns in a single piece by the use of wood for veneering softened by steam and of molding and brac-

ing and said apparatus, as above described and finally specified.

4th. The methods of construction of said horns by the use of wood for veneering cut into strips and secured upon ribs of wood or of any metal, internally or externally whatever may be their forms and dimensions, as described above and finally specified.

5th. The methods of construction and the combinations of combined horns, those horns of several different woods, with or without vibrating glass or metals, as above described and finally specified.

EUG. TURPIN.

February, 1902.

No. 759,639.

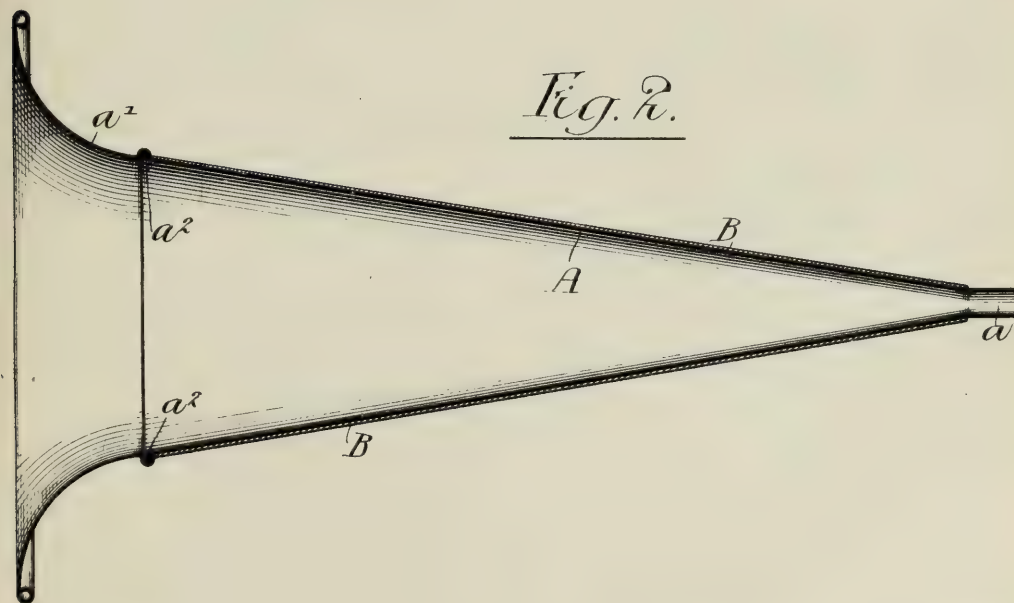
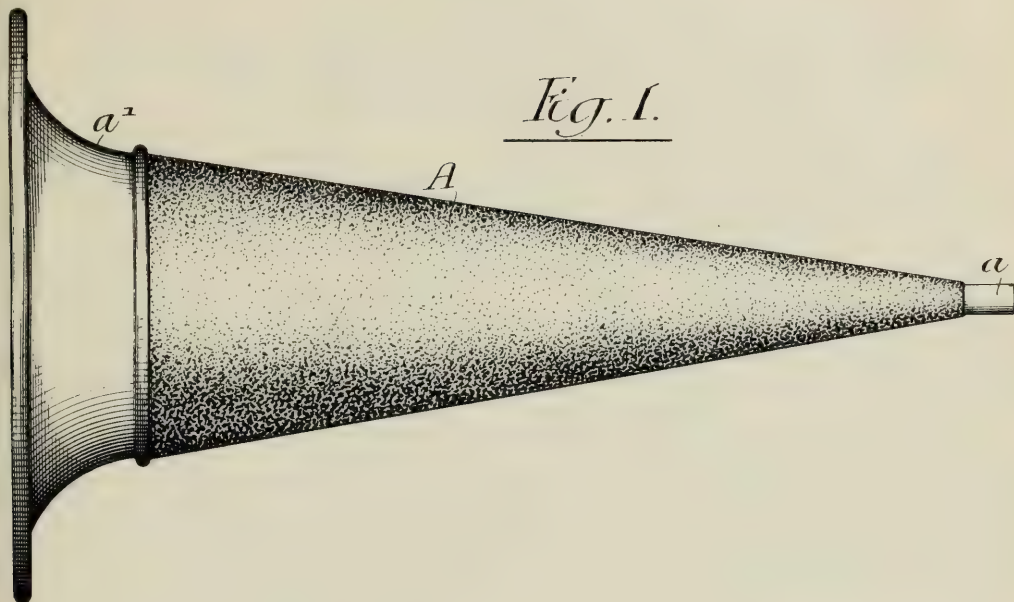
PATENTED MAY 10, 1904.

H. SHEBLE.

HORN FOR TALKING MACHINES.

APPLICATION FILED JULY 21, 1903.

NO MODEL.

Witnesses:-

Hamilton D. Turner

Wm. E. G. G. G.

Inventor:-
Horace Sheble,
by his Attorneys

Howson & Howson

UNITED STATES PATENT OFFICE.

HORACE SHEBLE, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HAWTHORNE & SHEBLE MANUFACTURING COMPANY, OF PHILA-
DELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

HORN FOR TALKING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 759,639, dated May 10, 1904.

Application filed July 21, 1903. Serial No. 166,449. (No model.)

To all whom it may concern:

Be it known that I, HORACE SHEBLE, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Horns for Talking-Machines, of which the following is a specification.

My invention consists of an improvement in the construction of horns primarily designed to be connected to the conduit leading from the vibrating diaphragm or sound-box of a talking-machine of any of the well-known forms, the object of the invention being to provide means for damping or preventing the vibrations of the metal of which the horn is composed, which heretofore have ordinarily interfered with the vibration of the column of air within the horn, so as to give a more or less objectionable quality to the music or other sounds reproduced by the machine to which the horn is attached.

A further object of the invention is to provide means whereby the appearance of a horn of the character above noted may be greatly enhanced, said means being of such a nature as to be durable.

These objects I attain as hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a horn for use in connection with a talking-machine, being illustrated as provided with a covering according to my invention. Fig. 2 is a sectional elevation of the horn shown in Fig. 1, showing the detail construction of the same.

In horns for the purpose noted it has hitherto been customary to construct them of either polished brass or bronze throughout their entire length or to simply have them polished at their mouth or bell, while covering with black japan or other similar material the body or conical portion. To those accustomed to the use of machines for reproducing sound it is well known that hitherto there has always been present an objectionable metallic note produced by the machine when in operation, due in a great measure to the fact that the

vibrating column of air within the horn sets in vibration the metal of the horn itself, which in turn causes vibrations of air, so as to give rise to the objectionable note or tone mentioned. I have found, however, that by covering the body or conical portion of the horn with a layer of cloth, preferably adherent to the horn, the quality of the sound reproductions is greatly improved and that with the entire absence of the objectionable metallic sound heretofore always present.

In the above-mentioned drawings, A is the body or conical portion of a horn formed of metal, as is usually the case, and having at its smaller end a cylindrical nozzle *a* for attachment to the tube connected to the sound-box containing the vibrating diaphragm of the talking-machine.

a' is the bell or mouth of the horn and is held, as customary, to the large end of the body portion A by means of a turned-over edge in engagement with a flange *a''* on said body portion.

B is a layer of cloth preferably extending over the entire surface of the body portion A and being held thereon by glue, varnish, or any other desired material. Not only does this coating of cloth dampen the vibrations of the metal horn, and thereby improve the quality of the sounds reproduced by the machine, but it gives a finished appearance to the body portion of said horn and is itself of such a nature as not to be easily injured or disfigured. This is quite an important feature, as the japan or varnish hitherto used is very easily scratched, with consequent injury to the appearance of the horn.

I claim as my invention—

1. As a new article of manufacture, a horn for talking-machines, the same having a substantially conical body portion of relatively stiff sheet metal and having a covering of woven fabric upon said body portion, said fabric being permanently retained in intimate contact with the body, substantially as described.

2. As a new article of manufacture, a horn for a talking-machine, the same including a conical body portion and a mouthpiece therefor, said parts being of relatively stiff sheet metal with a covering of cloth glued to the said body portion of the horn, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE SHEBLE.

Witnesses:

CHAS. SULZNER,
MARIE E. DONIGAN.

[Endorsed]: United States District Court, Northern District of California, Second Division. Searchlight Horn Company, Complainant, against Pacific Phonograph Company, Defendant. Searchlight Horn Company, Complainant, against Babson Brothers, Inc., Defendant. Complainant's Exhibit Sheble Patent No. 759,139. Jessie B. Kay, Notary Public.

Filed Aug. 24, 1914. W. B. Maling, Clerk.

No. Eq. 18. U. S. Dist. Court, Nor. Dist. of Cal. Pltffs. Exhibit 26. Filed Nov. 17, 1915. W. B. Maling, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 26. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

Defendants' Exhibit "S."

2—390.

UNITED STATES OF AMERICA,
DEPARTMENT OF THE INTERIOR.
UNITED STATES PATENT OFFICE.

To all to whom these presents shall come, Greeting:

THIS IS TO CERTIFY that the annexed is a true
copy from the Records of this Office of the File
Wrapper and Contents in the matter of the

Letters Patent of

Peter C. Nielsen,

Number 771,441,

Granted October 4, 1904,

for

Improvement in Horns for Phonographs or Similar
Machines.

IN TESTIMONY WHEREOF I have hereunto
set my hand and caused the seal of the Patent Office
to be affixed at the City of Washington, this 29th
day of May, in the year of our Lord one thousand
nine hundred and eleven and of the Independence of
the United States of America the one hundred and
thirty-fifth.

F. A. TENNANT,
Assistant Commissioner of Patents.

NUMBER (SERIES OF 1900). 1904 DIV. 23
203,080 (EX'R'S BOOK). 114

9 (04)

PATENT No. 771,441.

Name—Peter C. Nielsen

of Greenpoint.

County of

State of New York.

Invention—Horn for Phonographs and Similar
Machines.

ORIGINAL.

RENEWED.

Division of App., No.
PARTS OF APPLICATION FILED.
, filed , 190

Petition Apr. 14, 1904 , 190

Affidavit “ “ , 1904 , 190

Specification “ “ , 1904 , 190

Drawing “ “ , 1904 , 190

Model or Specimen Not reqd., 190 , 190

First Fee Cash \$15.00 Apr. 14, 1904 , 190

“ “ Cert. , 190 , 190

Appl. filed complete Apr. 14, 1904 , 190

Examined—J. T. Newton, Ex. Sept. 2, 1904 , 190

Countersigned—R. E. Grant, , 190

For Commissioner. For Commissioner.

Notice of Allowance Sept. 3, 1904 , 190

Final Fee Cash \$20 Sept. 12, 1904 , 190

“ “ Cert. , 190 , 190

Patented October 4 , 1904

Attorney EDGAR TATE & CO.,

245 Broadway,

New York City.

Associate Attorney—WM. N. CROMWELL,
1003 F. St., N. W.,
City.

Name	Serial Number
Patent No.	Date of Patent

3

No. 203080	No. 1/2
	filed
	Apl 14/04

\$15—RECEIVED

APR. 14, 1904. ck.

CHIEF CLERK, U. S. PATENT OFFICE.

245 Broadway, New York.

April 13, 1904.

Hon. Commissioner of Patents,
Washington, D. C.

Sir:—

We beg to enclose herewith application of Peter C. Nielsen for Letters Patent for Horns for Phonographs and Similar Machines, together with check for \$15, the Government filing fee thereon.

Very respectfully,

EDGAR TATE & CO.

APPLICATION FOR LETTERS PATENT
OF THE UNITED STATES.

MAIL ROOM	No. 203080	No. 1/2.
APR. 14, 1904		Appl'n filed
U. S. PATENT OFFICE.		Apl. 14/04.

PETITION.

To the Commissioner of Patents:

Your petitioner, PETER C. NIELSEN, a citizen of the United States and residing at Greenpoint in

the County of Kings and State of New York and having a post-office address at 23 Drake Ave., Greenpoint, Brooklyn, N. Y., prays that Letters Patent may be granted to him for the improvements in HORNS FOR PHONOGRAPHS AND SIMILAR MACHINES set forth in the annexed specification; and he hereby appoints Edgar Tate and William W. Canfield of the firm of EDGAR TATE & CO., 245 Broadway, New York, or their accredited agent to act as his attorneys to prosecute this application, with power to make alterations and amendments therein, to sign the drawings, to receive the patent, and to transact all business in the Patent Office connected therewith.

PETER C. NIELSEN.

SPECIFICATION.

To all whom it may Concern:

Be it known that I, PETER C. NIELSEN, a citizen of the United States residing at Greenpoint in the County of Kings and State of New York, have invented certain new and useful improvements in HORNS FOR PHONOGRAPHS OR SIMILAR MACHINES of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the horn of a phonograph or other machine of this class and the object thereof is to provide a horn for machines of this class which will do away with the mechanical, vibratory, and metallic sound usually produced in the operation such machines, and also produce a full, even and con-

tinuous volume of sound in which the articulation is clear, full and distinct.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:—

Fig. 1 is a side view of my improved phonograph horn;

Fig. 2 an end view thereof;

Fig. 3 an enlarged section on the line 3-3 of Fig. 1; and

Fig. 4 a longitudinal section on the line 4-4 of Fig. 3.

In the practice of my invention, I provide a horn *a* provided at its smaller end with the usual nozzle piece *a2* by means of which connection is made with the machine, and in the form of construction shown a supplemental piece *a3* is employed between the larger or body portion of the horn and the nozzle piece *a2*, but the parts *a3* and *a2* may be formed integrally if desired, and may be constructed in any desired manner.

The main part *a* of the horn is bell-shaped in form and tapers outwardly gradually from the part *a3* to the large or mouth end *a4*, and this curve or taper is greater or more abrupt adjacent to said larger or mouth end.

The body portion of the horn is also composed of a plurality of longitudinal strips *b* which are gradually tapered from one end to the other and which are connected longitudinally so as to form longitudi-

nal ribs *b2*, each of the strips *b* being provided at its opposite edges with a flange *b3*, and these flanges, of the separate strips *b*, are connected to form the ribs *b2*.

The body portion of the horn, or the strips *b* are composed of sheet metal, and it will be observed that the inner wall of the body portion of said horn in cross section is made up of a plurality of short lines forming, substantially, a circle, and it is the construction of the body portion of the horn as hereinbefore described, that gives thereto the qualities which it is the objects of this invention to produce, which objects are the result of the formation of the horn, or the body portion thereof of longitudinal strips *b*, and providing the outer surface thereof with the longitudinal ribs *b2*, and curving the body portion of the horn in the manner described.

If desired, the part *a3* may be formed integrally with the body portion of the horn, in which event the ribs *b2* would extend to the nozzle or connecting portion *a2*, and it is the longitudinal ribs *b2* which contribute mostly to the successful operation of the horn, said rib serving to do away with the vibratory character of horns of this class as usually made and doing away with the metallic sound produced in the operation thereof.

My improved horn may be used in connection with phonographs, or other machines of this class, and changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim

as new and desire to secure by Letters Patent, is:—

1. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally arranged strips of metal provided at their edges with longitudinal outwardly directed flanges whereby said strips are connected and whereby, the body portion of the horn is provided on the outside thereof with longitudinally arranged ribs, substantially as shown and described.

2. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally arranged strips of metal provided at their edges with longitudinal outwardly directed flanges whereby said strips are connected and whereby the body portion of the horn is provided on the outside thereof with longitudinally arranged ribs, said strips being tapered from one end of said horn to the other, substantially as shown and described.

8/25/04 3. ~~A horn for phonographs and similar machines, said horn being tapered in the usual manner and the body thereof on the outer side thereof being provided with longitudinally arranged ribs, substantially as shown and described.~~

Insert A

IN TESTIMONY that I claim the foregoing as my invention I have signed my name in the presence of the subscribing witnesses this 13th day of April, 1904.

PETER C. NIELSEN.

Witnesses:

F. A. STEWART,
C. J. KLEIN.

OATH.

STATE OF NEW YORK,
COUNTY OF NEW YORK,—ss.

PETER C. NIELSEN, the above named petitioner, being duly sworn, deposes and says that he is a citizen of the United States and resident of Greenpoint in the County of Kings and State of New York; that he verily believes himself to be the original, first and sole inventor of the improvements in HORNS FOR PHONOGRAPHS AND SIMILAR MACHINES described and claimed in the annexed specification; that he does not know and does not believe that the same was ever known or used prior to his invention thereof, or patented or described in any printed publication in the United States of America or any country foreign thereto before his invention thereof, or more than two years prior to this application, or in public use or on sale in the United States for more than two year prior to this application; and that no application for a patent has been filed by him or his legal representatives or assigns in any country foreign to the United States.

PETER C. NIELSEN.

Sworn to and subscribed before me this 13th day of April, 1904.

[Notarial Seal]

W. W. CANFIELD,
Notary Public.

2—260

Div. 23—Room 379

Address only

"The Commissioner of Patents,
Washington, D. C."

Paper No. 1, Rejection

All communications respecting this
application should give the serial num-
ber, date of filing, and title of in-
vention.

J. H. D.

DEPARTMENT OF THE INTERIOR.
UNITED STATES PATENT OFFICE.

WASHINGTON, D. C. May 13, 1904.

MAILED " " "

Peter C. Nielsen,
Care Edgar Tate & Co.,
#245 Broadway,
New York, N. Y.

Please find below a communication from the
EXAMINER in charge of your application for
Horn for Phonographs & Similar Machines, filed
April 14, 1904, Serial number 203,080.

F. I. ALLEN,

~~E. B. MOORE,~~

Commissioner of Patents.

Claim 3 of this application is rejected in view of
Tourtels Eng. Pat. #20,557 of 1902, Graphophones,
and U. S. Patent of Fallows, Aug. 15, 1876, #181,159,
Games and Toys, Toys, Sounding, it being held that
it would not constitute patentable invention to pro-
vide a horn with longitudinal ribs, in view of the
transverse ribs of Fallow's and the longitudinal rib
of Tourtel.

J. T. NEWTON,

Ex.

J. H. L.

No. 2

Amdt. A

C.....6/7/04

MAIL ROOM

JUN. 7, 1904.

U. S. PATENT OFFICE.

IN THE UNITED STATES PATENT OFFICE.

ROOM #379.

In re Application of PETER C. NIELSEN, Horn
for Phonographs and Similar Machines, Filed
April 14, 1904. Ser. #203,080.

To the Commissioner of Patents,

Sir: We desire to amend the above entitled case
as follows:

Add the following claim.

8/26/04

4. A horn for phonographs and similar machines, said horn
being tapered in the usual manner and the body thereof on the
A outer side thereof being provided with longitudinally arranged
ribs between which the longitudinal parts of the horn taper
from one end to the other, substantially as shown and described.

Insert B

REMARKS.

This amendment is made in view of the Official
communication of May 13. The references cited in
this case do not show a horn for talking machines
having longitudinally arranged ribs on the outer
side thereof. One of the references cited shows
spirally arranged ribs, but this in no sense antici-
pates applicant's invention. This arrangement of

the ribs would make the horn vibrate more and cause more of a metallic sound than if no ribs at all were formed on it. It is the longitudinally arranged ribs on the outer side of the horn which produce the result claimed by applicant, and favorable action is respectively requested.

Respectfully submitted,

EDGAR TATE & CO.

Attorney for Applicant.

Dated New York, June 6, 1904.

2—260

Div. 23—Room 379

Paper No. 3, Rej.

Address only

All communications respecting this

"The Commissioner of Patents, application should give the serial number, date of filing, and title of invention.
Washington, D. C."

J.H.D.

DEPARTMENT OF THE INTERIOR.

UNITED STATES PATENT OFFICE

WASHINGTON, D. C., June 22, 1904.

MAILED

“ “ “

Peter C. Nielsen,

Care Edgar Tate & Co.,

#245 Broadway,

New York, N. Y.

Please find below a communication from the Examiner in charge of your application for Horn for Phonographs and Similar Machines, filed April 14, 1904, serial number 203,080.

F. I. ALLEN,

~~E. B. MOORE,~~

Commissioner of Patents.

This action is in response to the amendment filed the 7th instant.

Claims 3 and 4 are rejected in view of the patent of Clayton, Oct. 18, 1898, #612,639, (181-25), the part "A" in said patent being considered the equivalent of applicant's horn as defined in claims 3 and 4 though said part "A" be more flaring than applicant's horn.

J. T. NEWTON,
Ex.

J. H. L.
MAIL ROOM No. 4.
JUN. 22, 1904. Amdt. B
U. S. PATENT OFFICE. 6/22/04
IN THE UNITED STATES PATENT OFFICE,
ROOM 379.

In the Matter of the Application of PETER C.
NIELSEN,

Horn for Phonographs and Similar Machines.

Filed April 14, 1904, Ser. No. 203080.

Hon. Commissioner of Patents,
Washington, D. C.

Sir: We desire to amend the above-entitled case as follows:—

Add the following claim:—

5. A horn for phonographic and similar instruments, said
horn being larger at one end than at the other and being composed
of longitudinal tapered strips which are secured together at their
edges substantially as shown and described.

Insert C

REMARKS.

This amendment is supplemental to that dated June 6th, 1904, and it is respectfully requested that said amendment be entered and the case considered in view thereof.

Respectfully submitted,
EDGAR TATE & CO.,
Attorneys for Applicant.

Dated New York, June 21, 1904.

MAIL ROOM

JUN. 29, 1904.

U. S. PATENT OFFICE.

IN THE UNITED STATES PATENT OFFICE,
ROOM #379.

No. 5

Amdt. C. K.

6/29/04

In re Application of PETER C. NIELSEN, Horn
for Phonographs and Similar Instruments.

Filed April 14, 1904. Ser. No. 203,080.

To the Commissioner of Patents,

Sir: We desire to amend the above-entitled case as follows:

Add the following claim:

3 6. A horn for phonographs and similar instruments, said horn being larger at one end than at the C other and tapered in the usual manner, said horn being composed of longitudinally arranged strips secured together at their edges and the outer side thereof at the points where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.

REMARKS.

This amendment is made in view of the Official communication of June 22d. We have carefully considered Clayton the new reference cited and we do not see any similarity therein to applicant's device either in construction or operation. The object of applicant's construction is to destroy the vibratory character of a phonographic horn, and this cannot be done by corrugating the horn as all forms of corrugations increase the vibration instead of diminishing it. This fact ought to be apparent on its face and there is nothing in the references that meet claims 3 and 4 and favorable action thereon as well as on claims 6 presented herewith is requested.

Respectfully submitted,

EDGAR TATE & CO.,

Attorneys for Applicant.

Dated New York, June 28, 1904.

2—260

Div. 23—Room 379

Address only

"The Commissioner of Patents,
Washington, D. C."

Paper No. 6, Rej.

All communications respecting this
application should give the serial num-
ber, date of filing, and title of in-
vention.

J. H. D.

DEPARTMENT OF THE INTERIOR,

UNITED STATES PATENT OFFICE,

WASHINGTON, D. C., July 21, 1904.

MAILED

“ “ “

Peter C. Nielsen,

Care Edgar Tate & Co.,

#245 Broadway,

New York, N. Y.

Please find below a communication from the Ex-

aminer in charge of your application for Horn for Phonographs and Similar Machines, filed April 14, 1904, serial number 203,080.

F. I. ALLEN,
E. B. MOORE,
Commissioner of Patents.

This action is in response to the amendments filed the 22d and 29th instants.

It is believed that it cannot constitute patentable invention to provide any horn with longitudinal stiffening ribs to render the horn perhaps less vibratory. Claims 3, 4 and 5 are held to be devoid of patentable novelty and invention in view of this holding and the prior art exhibited by the patents cited and the patent of Osten et al., July 22, 1902, #705,126, (181-27).

J. T. NEWTON,
Ex.

J. H. L.

Patented Aug. 14, '04.

MAIL ROOM	No. 7
JUL. 27, 1904.	Argument
U. S. PATENT OFFICE.	7/27/04
IN THE UNITED STATES PATENT OFFICE,	
ROOM 379.	

In the Matter of the Application of PETER C. NIELSEN,

Horn for Phonographs and Similar Machines.

Filed April 14, 1904, Ser. No. 203,080.

Hon. Commissioner of Patents,
Washington, D. C.

Sir: The Official communication of July 21st has

been received and considered. This communication states that "it is believed that it cannot constitute patentable invention to provide any horn with longitudinal stiffening ribs to render the horn perhaps less vibratory," and Claims 3, 4 and 5 are rejected. We do not understand what bearing if any this statement has on Claim 5 and an explanation is required before further amendment of the case.

Respectfully submitted,

EDGAR TATE & CO.,

Attorneys for Applicant.

Dated New York, July 26, 1904.

2—260

Div. 23—Room 379

Address only

"The Commissioner of Patents,
Washington, D. C."

Paper No. 8.

All communications respecting this
application should give the serial number,
date of filing, and title of invention.

M. E. P.

DEPARTMENT OF THE INTERIOR,

UNITED STATES PATENT OFFICE,

WASHINGTON, D. C., August 5, 1904.

Mailed Aug. 5/04.

Peter C. Nielsen,

c/o Edgar Tate & Co.,

New York City.

Please find below a communication from the Examiner in charge of your application, Serial No. 203,080, filed April 14, 1904, for Horn for Phonographs and Similar Machines.

F. I. ALLEN,

E. B. MOORE,

Commissioner of Patents.

This action is responsive to letter filed the 27th ultimo.

Claims 3 and 4 are rejected in view of the holding that it cannot constitute patentable invention to provide any horn with longitudinal stiffening ribs to render the horn perhaps less vibratory. These claims and claim 5 are rejected also in view of the patents cited and the patent of Osten *et al* referred to in the last action.

J. T. NEWTON,
Ex.

J. H. L.

U. S. PATENT OFFICE,
RECEIVED
AUG. 17, 1904,
DIVISION 23.

No. 9.
Asso-Power

IN THE UNITED STATES PATENT OFFICE,
ROOM 379.

In the Matter of the Application of PETER C.
NIELSEN, Horn for Phonographs and Similar
Machines.

Filed April 14, 1904, Ser. No. 203,080.

Hon. Commissioner of Patents,
Washington, D. C.

Sir: We hereby appoint William N. Cromwell,
1003 F. Street, N. W., Washington, D. C., our asso-
ciate attorney in the above-entitled case.

Respectfully submitted,

EDGAR TATE & CO.,
Attorneys for Applicant.

Dated New York, Aug. 16, 1904.

U. S. PATENT OFFICE,

No. 10

RECEIVED

- Amdt.

AUG. 26, 1904.

DIVISION 23.

IN THE UNITED STATES PATENT OFFICE.

Before the Examiner, Room 379.

In re Application of PETER C. NIELSEN, Horn for
Phonographs and Similar Machines.

Filed April 14, 1904, Serial No. 203,080.

Hon. Commissioner of Patents,

Sir: The above-entitled application is hereby
amended as follows:

Cancel claims 3, 4 and 5.

REMARKS.

The above amendment places this case in condi-
tion for allowance, and such action is respectfully
requested at an early date.

Very respectfully,

W. N. CROMWELL,
Associate Attorney.

A. R. Issue Division. 2—181. Serial No. 203,080

All communications should be addressed to

“The Commissioner of Patents,

Washington, D. C.”

DEPARTMENT OF THE INTERIOR,

U. S. PATENT OFFICE,

Washington, D. C., Sept. 3, 1904.

Peter C. Nielsen,

c/o W. N. Cromwell,

City.

Sir:—Your application for a patent for an improvement in Horn for Phonographs and Similar Machines, filed April 14, 1904, has been examined and **ALLOWED**.

The final fee, Twenty Dollars, must be paid, and the Letters Patent bear date as of a day not later than **SIX MONTHS** from the time of this present notice of allowance.

If the final fee is not paid within that period the patent will be withheld, and your only relief will be by a renewal of the application, with additional fees, under the provisions of Section 4897, Revised Statutes. The office aims to deliver patents upon the day of their date, and on which their term begins to run; but to do this properly applicants will be expected to pay their final fees at least **TWENTY DAYS** prior to the conclusion of the six months allowed them by law. The printing, photolithographing, and engrossing of the several patent parts, preparatory to final signing and sealing, will consume

the intervening time, and such work will not be done until after payment of the necessary fees.

When you send the final fee you will also send, **DISTINCTLY AND PLAINLY WRITTEN**, the name of the **INVENTOR** and **TITLE OF INVENTION** AS ABOVE GIVEN, **DATE OF ALLOWANCE** (which is the date of this circular), **DATE OF FILING**, and, if assigned, the **NAMES OF THE ASSIGNEES**.


If you desire to have the patent issue to **ASSIGNEES**, an assignment containing a **REQUEST** to that effect, together with the **FEE** for recording the same, must be filed in this Office on or before the date of payment of final fee.


After issue of the patent uncertified copies of the drawings and specifications may be purchased at the price of 5 cents each. The money should accompany the order. Postage stamps will not be received.


Respectfully,

F. I. ALLEN,

Commissioner of Patents.

 After allowance, and prior to payment of the final fee, applicants should carefully scrutinize the description to see that their statements and language are correct, as mistakes not incurred through the fault of the office, and not affording legal grounds for reissues, will not be corrected after the delivery of the letters patent to the patentee or his agent.

 IN REMITTING THE FINAL FEE GIVE THE SERIAL NUMBER AT THE HEAD OF THIS NOTICE.

 If payment is made by check or draft, the credit allowed is subject to the collection of the same.

\$20 RECEIVED

ck SEP. 12, 1904. z

CHIEF CLERK, U. S. PATENT OFFICE.

245 Broadway, New York,

Sept. 10, 1904.

Hon. Commissioner of Patents,

Washington, D. C.

Sir: We beg to enclose herewith our check for \$20 final Government fee in the matter of the application of Peter C. Nielsen Phonograph Horn, filed April 14, 1904, Ser. No. 203,080, Allowed Sept. 3, 1904, and beg to request that the patent be duly issued.

Very respectfully,

EDGAR TATE & CO.

C. E. R.

2-191 Serial No. 203,080.

ISSUE DIVISION.

All communications should be addressed to
"The Commission of Patents,
Washington, D. C."

DEPARTMENT OF THE INTERIOR.

UNITED STATES PATENT OFFICE,

WASHINGTON, D. C., Sept. 12, 1904.

Peter C. Nielsen,

c/o Edgar Tate & Co.,

245 Broadway,

New York, N. Y.

Sir:

You are informed that the final fee of TWENTY DOLLARS has been received in your application for Improvement in

Horn for Phonographs and Similar Machines.

Very respectfully,

F. I. ALLEN.

~~E. B. MOORE,~~

Commissioner of Patents.

No. 771,441.

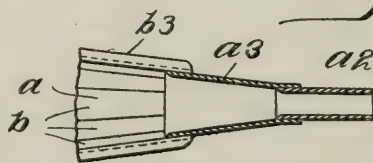
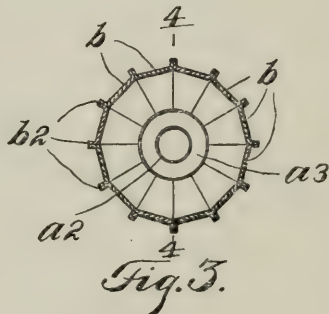
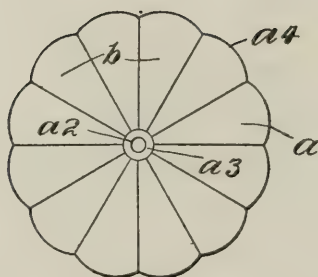
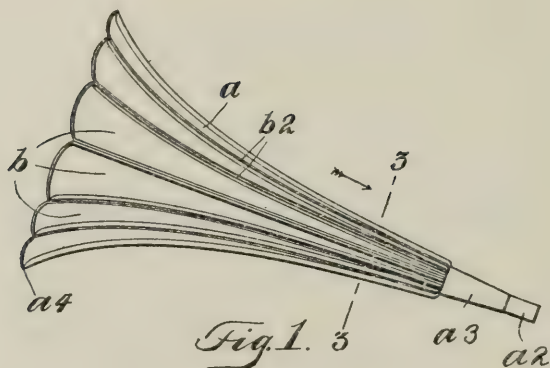
PATENTED OCT. 4, 1904.

P. C. NIELSEN.

HORN FOR PHONOGRAPHS OR SIMILAR MACHINES.

APPLICATION FILED APR. 14, 1904.

NO MODEL.



WITNESSES

Attestingly
F. A. Stewart

Fig. 4. BY

INVENTOR

Peter C. Nielsen,
Edgar & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE.

PETER C. NIELSEN, OF GREENPOINT, NEW YORK.
HORN FOR PHONOGRAPHS OR SIMILAR MACHINES.

SPECIFICATION forming part of Letters Patent No. 771,441, dated October 4, 1904.

Application filed April 14, 1904. Serial No. 203,080. (No model.)

To all whom it may concern:

Be it known that I, PETER C. NIELSEN, a citizen of the United States, residing at Greenpoint, in the county of Kings and State of New York, have invented certain new and useful Improvements in Horns for Phonographs or Similar Machines, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the horn of a phonograph or other machine of this class; and the object thereof is to provide a horn for machines of this class which will do away with the mechanical, vibratory, and metallic sound usually produced in the operation of such machines, and also produce a full, even, and continuous volume of sound in which the articulation is clear, full, and distinct.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view of my improved phonograph-horn; Fig. 2, an end view thereof; Fig. 3, an enlarged section on the line 3 3 of Fig. 1, and Fig. 4 a longitudinal section on the line 4 4 of Fig. 3.

In the practice of my invention I provide a horn *a*, provided at its smaller end with the usual nozzle-piece *a*², by means of which connection is made with the machine, and in the form of construction shown a supplemental piece *a*³ is employed between the larger or body portion of the horn and the nozzle-piece *a*²; but the parts *a*³ and *a*² may be formed integrally, if desired, and may be construed in any desired manner. The main part *a* of the horn is bell-shaped in form and tapers outwardly gradually from the part *a*³ to the larger or mouth end *a*⁴, and this curve or taper is greater or more abrupt adjacent to said larger or mouth end. The body portion of the horn is also composed of a plurality of longitudinal strips *b*, which are gradually tapered from one end to the other, and which are connected longitudinally, so as to form longitudinal ribs *b*², each of the strips *b* being provided at

its opposite edges with a flange *b*³, and these flanges of the separate strips *b* are connected to form the ribs *b*². The body portion of the horn or the strips *b* are composed of sheet metal, and it will be observed that the inner wall of the body portion of said horn in cross-section is made up of a plurality of short lines forming substantially a circle, and it is the construction of the body portion of the horn as hereinbefore described that gives thereto the qualities which it is the objects of this invention to produce, which objects are the result of the formation of the horn or the body portion thereof of longitudinal strips *b* and providing the outer surface thereof with the longitudinal ribs *b*² and curving the body portion of the horn in the manner described. If desired, the part *a*³ may be formed integrally with the body portion of the horn, in which event the ribs *b*² would extend to the nozzle or connecting portion *a*², and it is the longitudinal ribs *b*² which contribute mostly to the successful operation of the horn, said ribs serving to do away with the vibratory character of horns of this class as usually made and doing away with the metallic sound produced in the operation thereof.

My improved horn may be used in connection with phonographs or other machines of this class, and changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally-arranged strips of metal provided at their edges with longitudinal outwardly-directed flanges whereby said strips are connected and whereby, the body portion of the horn is provided on the outside thereof with longitudinally-arranged ribs, substantially as shown and described.

2. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally-arranged strips of metal provided at their edges with longitudinal outwardly-directed flanges whereby said strips

771,441

2 are connected and whereby, the body portion
of the horn is provided on the outside thereof
with longitudinally-arranged ribs, said strips
being tapered from one end of said horn to the
5 other, substantially as shown and described.

3. A horn for phonographs and similar in-
struments, said horn being larger at one end
than at the other and tapered in the usual
manner, said horn being composed of longi-
10 tudinally-arranged strips secured together at
their edges and the outer side thereof at the

points where said strips are secured together
being provided with longitudinal ribs, sub-
stantially as shown and described.

In testimony that I claim the foregoing as 15
my invention I have signed my name, in pres-
ence of the subscribing witnesses, this 13th
day of April, 1904.

PETER C. NIELSEN.

Witnesses:

F. A. STEWART,

C. J. KLEIN.

1904

CONTENTS:

[In pencil:] Acoustics—Megaphones.

Print.

$\frac{1}{2}$ Application 1 paper.

1. Rej May 13/04.
2. Amdt. A. June 7/04.
3. Rej June 22/04.
4. Amdt. B. June 22/04.
5. Amdt. C. June 29/04.
6. Rej July 21/04.
7. Argument July 27/04.
8. Rej Aug 5/04.
9. Asso-Power Aug. 17/04.
10. Amdt. Aug. 26/04.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.
- 19.
- 20.
- 21.
- 22.
- 23.

TITLE:

Improvement in Horn for
Phonographs or Similar Machines.

[Stamped.] U. S. Patent Office. Copy Made
May 29, 1911.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit "S." Oct. 2/12, M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "S." Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "S." Filed Apr. 8, 1916. F. D. Monckton, Clerk.

No. 771,441.

PATENTED OCT. 4, 1904.

P. C. NIELSEN.
HORN FOR PHONOGRAPHS OR SIMILAR MACHINES.

APPLICATION FILED APR. 14, 1904.

NO MODEL.

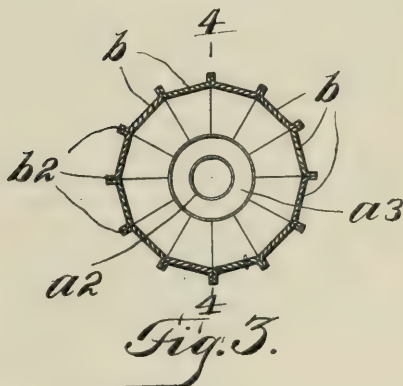
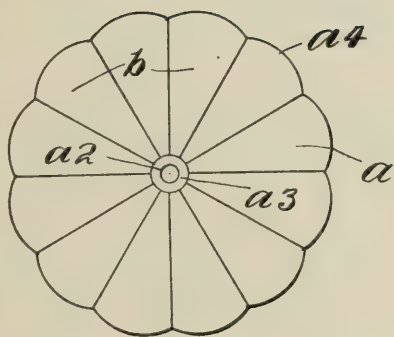
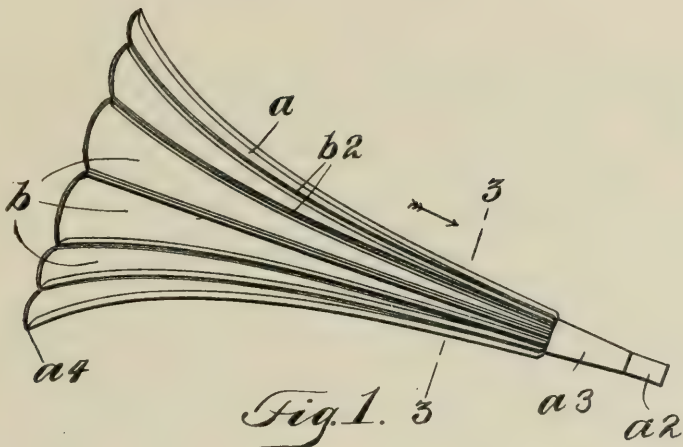


Fig. 2.

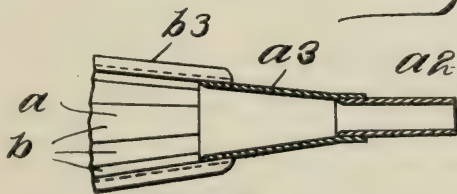


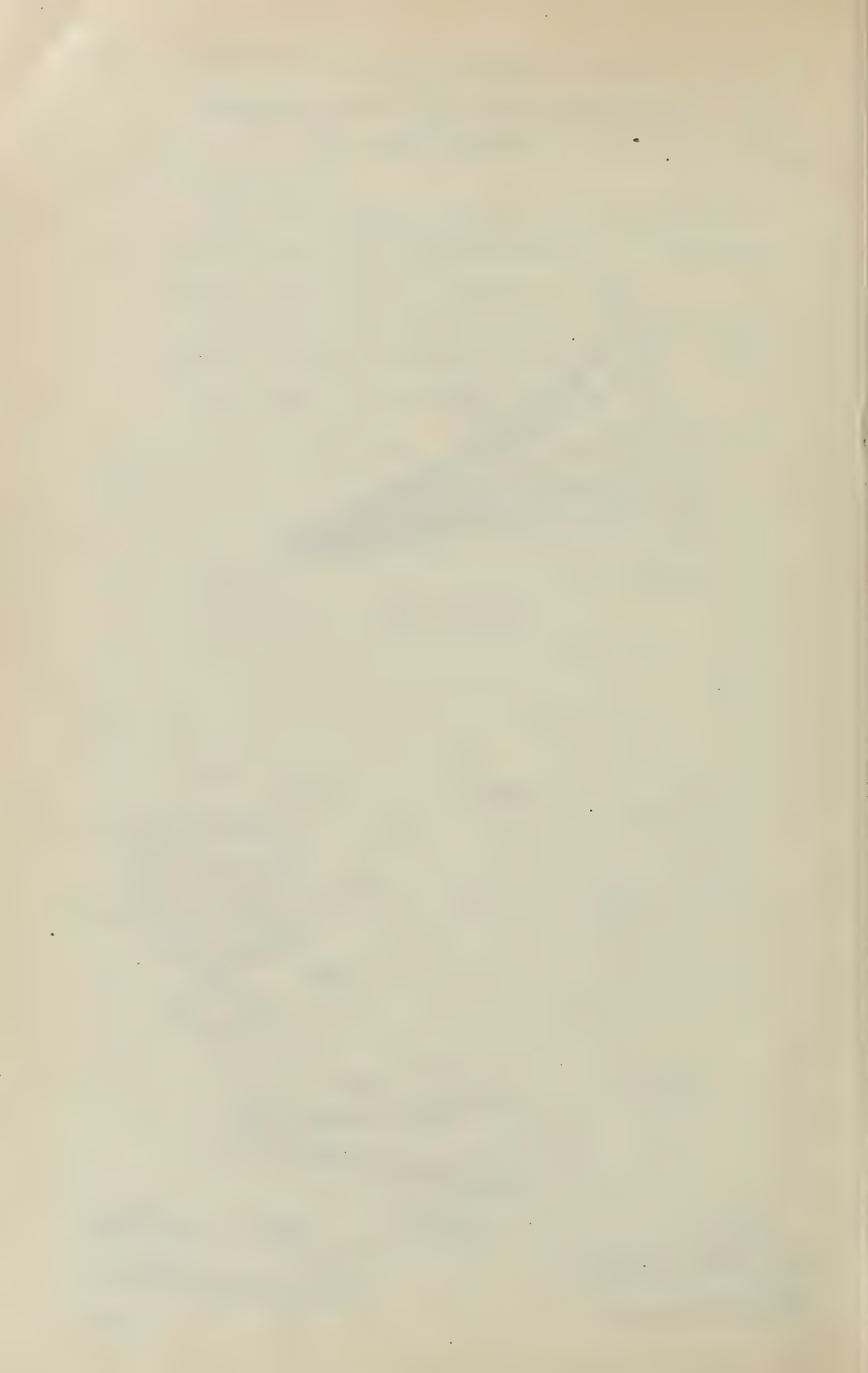
Fig. 4.

WITNESSES

Attestingly
F. A. Stewart

INVENTOR

Peter C. Nielsen,
Edgar & Peterson
ATTORNEYS



PETER C. NIELSEN, OF GREENPOINT, NEW YORK.

HORN FOR PHONOGRAPHS OR SIMILAR MACHINES.

SPECIFICATION forming part of Letters Patent No. 771,441, dated October 4, 1904.

Application filed April 14, 1904. Serial No. 203,080. (No model.)

To all whom it may concern:

Be it known that I, PETER C. NIELSEN, a citizen of the United States, residing at Greenpoint, in the county of Kings and State of New York, have invented certain new and useful Improvements in Horns for Phonographs or Similar Machines, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the horn of a phonograph or other machine of this class; and the object thereof is to provide a horn for machines of this class which will do away with the mechanical, vibratory, and metallic sound usually produced in the operation of such machines, and also produce a full, even, and continuous volume of sound in which the articulation is clear, full, and distinct.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view of my improved phonograph-horn; Fig. 2, an end view thereof; Fig. 3, an enlarged section on the line 3 3 of Fig. 1, and Fig. 4 a longitudinal section on the line 4 4 of Fig. 3.

In the practice of my invention I provide a horn *a*, provided at its smaller end with the usual nozzle-piece *a'*, by means of which connection is made with the machine, and in the form of construction shown a supplemental piece *a''* is employed between the larger or body portion of the horn and the nozzle-piece *a'*; but the parts *a''* and *a'* may be formed integrally, if desired, and may be constructed in any desired manner. The main part *a* of the horn is bell-shaped in form and tapers outwardly gradually from the part *a''* to the larger or mouth end *a'*, and this curve or taper is greater or more abrupt adjacent to said larger or mouth end. The body portion of the horn is also composed of a plurality of longitudinal strips *b*, which are gradually tapered from one end to the other, and which are connected longitudinally, so as to form longitudinal ribs *b'*, each of the strips *b* being provided at

its opposite edges with a flange *b''*, and these flanges of the separate strips *b* are connected to form the ribs *b'*. The body portion of the horn or the strips *b* are composed of sheet metal, and it will be observed that the inner wall of the body portion of said horn in cross-section is made up of a plurality of short lines forming substantially a circle, and it is the construction of the body portion of the horn as hereinbefore described that gives thereto the qualities which it is the objects of this invention to produce, which objects are the result of the formation of the horn or the body portion thereof of longitudinal strips *b* and providing the outer surface thereof with the longitudinal ribs *b'* and curving the body portion of the horn in the manner described. If desired, the part *a''* may be formed integrally with the body portion of the horn, in which event the ribs *b'* would extend to the nozzle or connecting portion *a'*, and it is the longitudinal ribs *b'* which contribute mostly to the successful operation of the horn, said ribs serving to do away with the vibratory character of horns of this class as usually made and doing away with the metallic sound produced in the operation thereof.

My improved horn may be used in connection with phonographs or other machines of this class, and changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally-arranged strips of metal provided at their edges with longitudinal outwardly-directed flanges whereby said strips are connected and whereby, the body portion of the horn is provided on the outside thereof with longitudinally-arranged ribs, substantially as shown and described.

2. A horn for phonographs and similar machines, the body portion of which is composed of longitudinally-arranged strips of metal provided at their edges with longitudinal outwardly-directed flanges whereby said strips

re connected and whereby, the body portion of the horn is provided on the outside thereof with longitudinally-arranged ribs, said strips being tapered from one end of said horn to the other, substantially as shown and described.

3. A horn for phonographs and similar instruments, said horn being larger at one end than at the other and tapered in the usual manner, said horn being composed of longitudinally-arranged strips secured together at their edges and the outer side thereof at the

points where said strips are secured together being provided with longitudinal ribs, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 13th day of April, 1904.

PETER C. NIELSEN.

Witnesses:

F. A. STEWART,

C. J. KLEIN.

[Endorsed]: No. 18. U. S. Dist. Court, Nor. Dist. of Cal. Pltffs. Exhibit 3. Filed Nov. 17, 1915. W. B. Maling, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Plaintiff's Exhibit 3. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

C. J. EICHHORN.
AMPLIFYING HORN.
APPLICATION FILED JUNE 14, 1905.

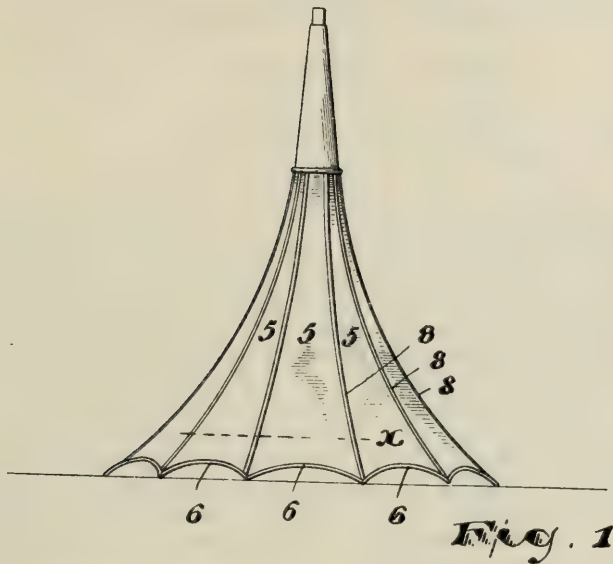


Fig. 2.

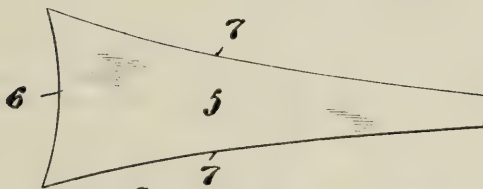
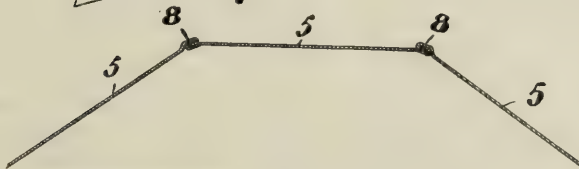


Fig. 3.



WITNESSES

Alfred Lancaster
Wm. M. Everett.

INVENTOR

Charles J. Eichhorn

BY

Charles H. Bell

ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES J. EICHHORN, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE
TEA TRAY COMPANY, OF NEWARK, NEW JERSEY.

AMPLIFYING-HORN.

No. 797,725.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed June 14, 1905. Serial No. 265,291.

To all whom it may concern:

Be it known that I, CHARLES J. EICHHORN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Amplifying-Horns; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

The objects of this invention are to secure greater strength and rigidity at the large end of the horn, more particularly in what are known as "flower-horns," whereby said horns will be better able to maintain their flower shape while in transportation and in use.

Heretofore flower-shaped horns have had their projecting petals at the large end of the horn project beyond the termination of the ribs by which the sections of the horn have been held together. Thus the said petals, made from thin sheet material, were lacking in stiffness and were very easily bent, particularly when the horn stood upon its large end, as indicated in Figure 1 of the drawings, the bending and indenting of the weak petals greatly marring the appearance of the horn, so that it became unmarketable in the hands of the retail dealer. By my construction I secure a flower-shaped horn which is materially stronger to resist downward pressure.

Referring to the accompanying drawings, in which like numerals of reference indicate corresponding parts in each of the several figures, Fig. 1 is a side elevation of my improved horn, and Fig. 2 is a plan of one of the longitudinal sections thereof, and Fig. 3 is an enlarged section of the same taken at line *x*, Fig. 1.

In said drawings, 5 5 indicate the sections

of the horn, which individually are flaring in plan and at their large ends are made concave, as at 6. The longitudinal edges 7 of said sections are also concave, so that when said sections are joined together the horn will be given the desired flaring and regularly scalloped shape at the edge of the large end, resembling a flower.

The sections 5 5 are joined together at their longitudinal edges by doubling the overlapping edges to form thick longitudinal ribs 8 8 8, which extend to the points of greatest projection of the petals. Thus the ribs 8 8 come in contact with the ground while the center parts of the sections are raised from the ground, and so are protected from bending or indentation.

Having thus described the invention, what I claim as new is—

1. The improved horn herein described, comprising a series of longitudinal sections joined together at their longitudinal edges, said longitudinal edges being concaved in plan and the large end edges of said sections being also concave, the joints of the said horn projecting beyond the center portions of the ends of said sections.

2. The improved horn herein described comprising longitudinal sections joined together at their longitudinal edges, the said longitudinal edges overlapping and being doubled together to form ribs, and the said ribs extending, at the large end of the horn, beyond the centers of the ends of the said sections and being adapted to take the weight of the horn when the latter stands upon its large end.

In testimony that I claim the foregoing I have hereunto set my hand this 8th day of June, 1905.

CHARLES J. EICHHORN.

Witnesses:

CHARLES H. PELL,
CLEMENT BEECROFT.

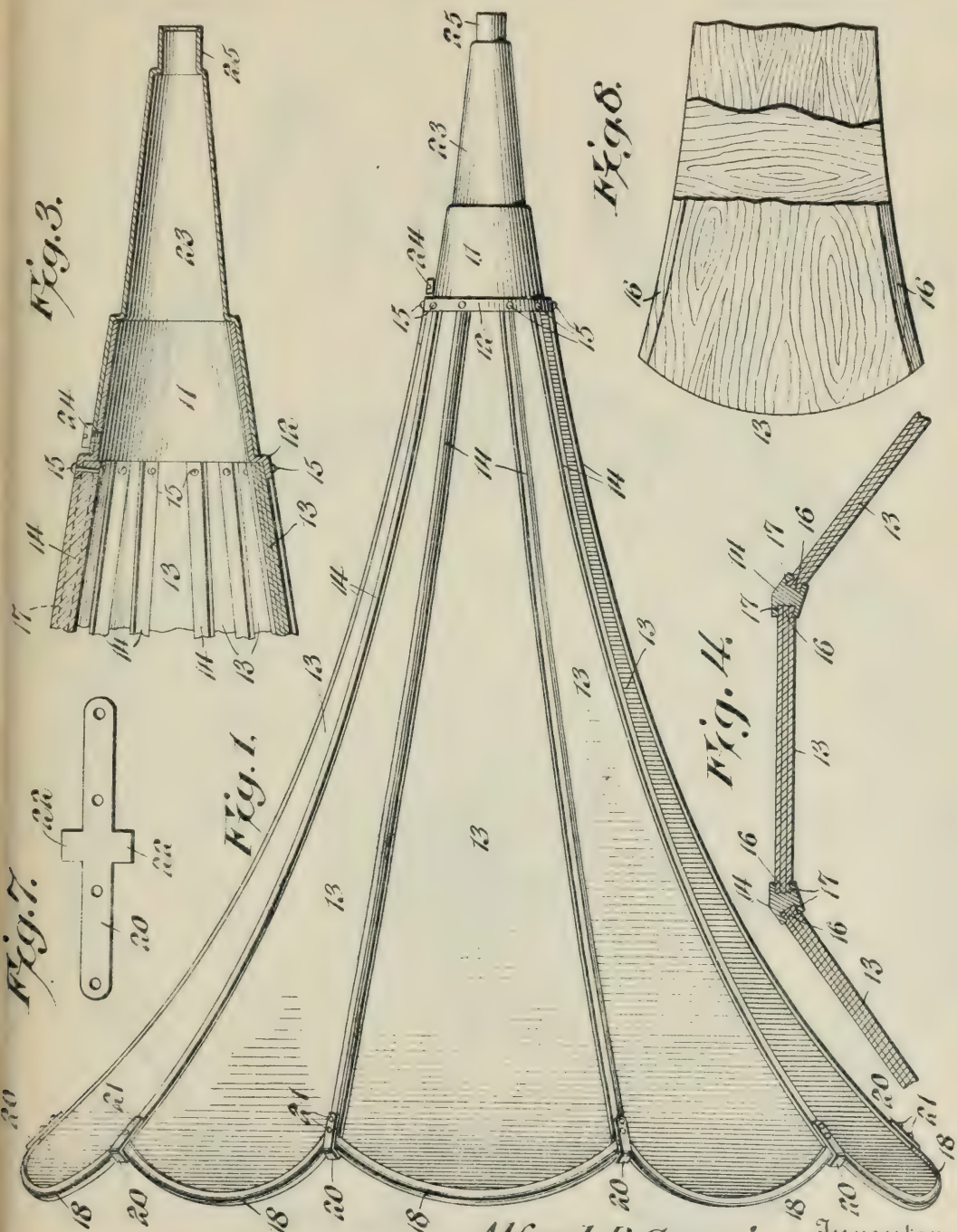
[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit 40. Filed Apr. 8, 1916. F. D. Monekton, Clerk.

A. R. CUNNIUS.
SOUND AUGMENTING HORN.
APPLICATION FILED JAN. 6, 1908.

921,676.

Patented May 18, 1909.

2 SHEETS—SHEET 1.



Witnesses
Howard N. Orr.
Bl. Foster

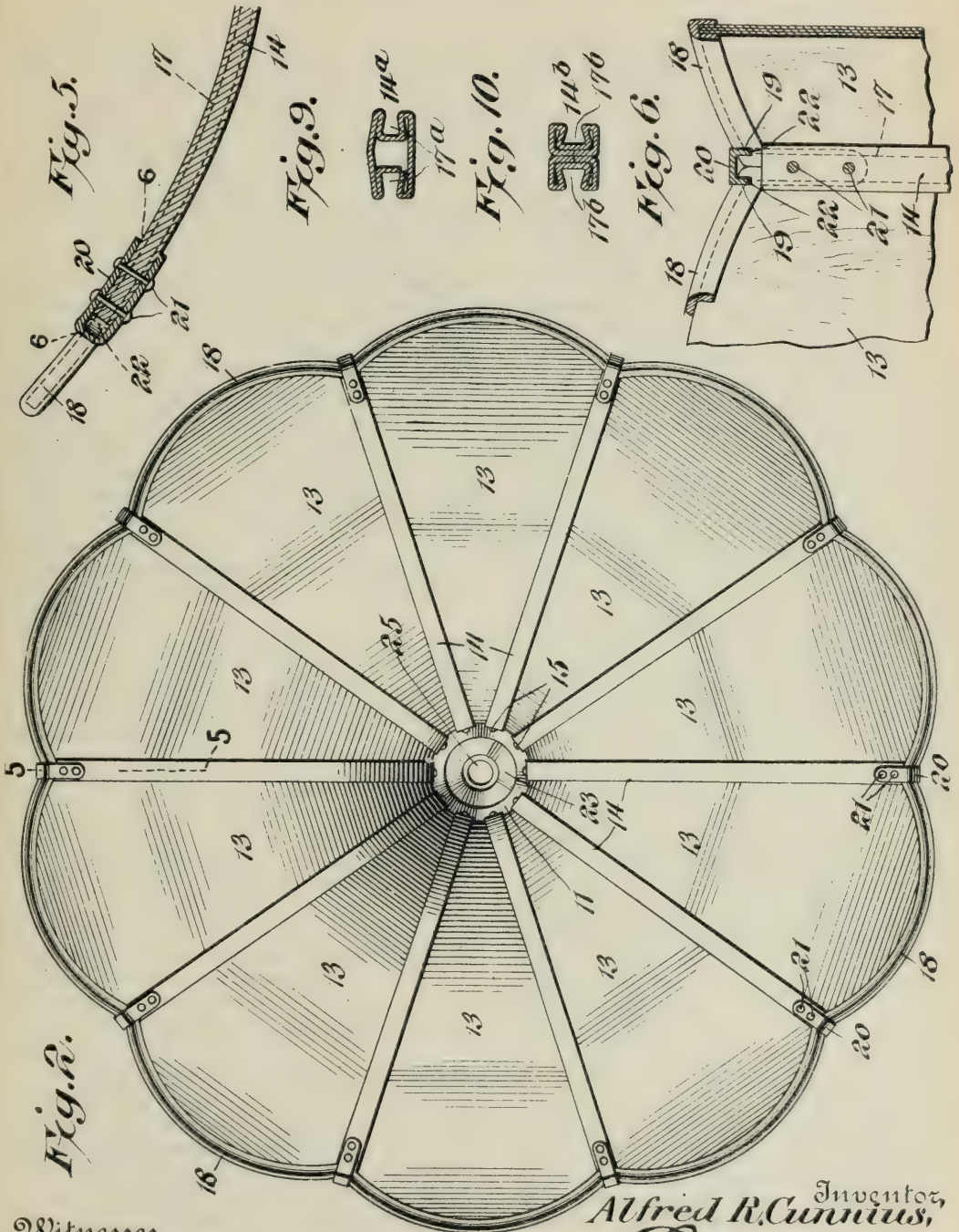
Alfred R. Cunnius, Inventor,
By *E. J. Siggers*
Attorney

A. R. CUNNIUS.
SOUND AUGMENTING HORN.
APPLICATION FILED JAN. 6, 1908.

921,676.

Patented May 18, 1909.

2 SHEETS—SHEET 2.



Witnesses
Howard D. Carr.
B. H. J. J.

By

Inventor,
Alfred R. Cunnius,
C. G. Siggers.

Attorney

ALFRED R. CUNNIUS, OF BROOKLYN, NEW YORK.

SOUND-AUGMENTING HORN.

No. 921,676.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed January 6, 1908. Serial No. 409,567.

To all whom it may concern:

Be it known that I, ALFRED R. CUNNIUS, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Sound-Augmenting Horn, of which the following is a specification.

The principal object of the present invention is to provide a horn, particularly useful in connection with phonographs, graphophones and similar sound reproducing instruments, which is comparatively simple in construction, and is composed of sections made of wood or other suitable material that will eliminate to a very material degree, harshness of tone, imparting clearness and fullness of tone that is so much desired.

A further object is to provide a horn that is very ornamental in appearance, and can be highly finished, the parts being comparatively simple, and the different sections being held securely in place.

The preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:—

Figure 1 is a side elevation of the horn, showing the reducer in place thereon. Fig. 2 is a front elevation of said horn. Fig. 3 is a detail longitudinal sectional view through the smaller end thereof. Fig. 4 is a detail cross sectional view therethrough. Fig. 5 is a detail longitudinal sectional view on the line 5—5 of Fig. 2. Fig. 6 is a sectional view on the line 6—6 of Fig. 5. Fig. 7 is a detail view of one of the clip blanks. Fig. 8 is a detail view of a portion of one of the horn sections, the parts being broken away to illustrate the arrangement of the veneers. Figs. 9 and 10 are cross sectional views illustrating modifications of the tie strips.

Similar reference numerals designate corresponding parts in all the figures of the drawings.

The smaller end of the horn comprises a metallic tapered cuff 11 provided at its larger end with an annular enlargement 12, forming an external annular shoulder. The body of the horn comprises a plurality of tapered sections 13, longitudinally curved and flat in cross section, said sections being preferably constructed of a plurality of layers of wood veneer glued together and having the grain crossed or disposed in angular relation, as illustrated in Fig. 8. The inner and smaller ends of the sections are located in the enlargement 12. Tie strips 14 are located be-

tween the adjacent edges of the various sections and have their inner ends located in the enlargement 12, and secured thereto by rivets or other suitable fasteners 15. The opposite longitudinal margins of the sections 13 are provided with continuous longitudinal dovetails 16 and the tie strips 14 have continuous dovetail grooves 17 in their opposite sides that are angularly disposed and receive said sections. It will be noted that the channels forming the dovetails are cut solely in the outside layers and do not extend completely through the same.

The outer end edges of the sections 13 are inclosed by metallic binding strips 18. These strips are abutted at their ends against one another and against the outer ends of the tie strips 14, as will be evident by reference to Fig. 6. They are furthermore provided adjacent to their ends and in their outer sides with sockets 19. The various abutting ends are secured together by substantially U-shaped clips 20 that embrace the ends as shown in Figs. 5 and 6, and are secured to the tie strips by rivets 21 or other suitable fasteners. These clips are provided at their outer ends with inwardly extending tongues 22 which tongues engage in the sockets 19. As a result, the clips interlock with the binding strips, preventing their separation and said clips engaging over the ends of the binding strips, serve to prevent their movement away from the tie strips and cover the joints between the parts.

For certain instruments of a well known type, the cuff 11 is slipped into the end of the reproducer tube, but for other types of machines, a reducing sleeve 23 is employed, the outer end of which is enlarged and snugly receives the cuff 11, being abutted against the external shoulder thereof and detachably fastened thereto by a screw 24, which screw may also be employed for securing the cuff 11 in place on the instrument, when the sleeve is not in use. This sleeve is provided at its inner end with a contracted tubular nipple 25 on which the end of the sound conveyor tube may be placed as will be evident, said nipple forming an annular internal shoulder that abuts against the end of the cuff.

This structure as will be evident is comparatively simple, being angular in cross section, as shown in Fig. 4 and the sections are effectively held together so that there is little chance of their becoming separated.

the dovetail connection between the sections and the tie strips insures a rigid and practically inseparable engagement between the parts and the binding strips are securely held together and to the tie strips. In this construction, moreover, the sections can be finished and highly polished, before they are assembled, and therefore made to match in color and material the case of the instrument with which it is used. Inasmuch as the dovetail forming channels are located solely in the outside layers, said layers will be clamped by the tie strips. By having the detachable reducer shown, said horn can be readily used in coaction with both of the two general types of sound reproducing machines now known.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description, and it will be understood that various changes in the size, shape, proportion and minor details of construction, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention. For instance, in Fig. 9 there is illustrated a modified form of tie strip, designated 14^a, this tie strip being constructed of sheet metal bent to produce the opposite sides and longitudinal dovetail grooves 17^a in its opposite edges.

Another embodiment of this invention is shown in Fig. 10. In this form of construction the tie strip 14^b is constructed of two pieces of sheet metal that are doubled and substantially U-shaped in cross section, forming the opposite longitudinally disposed dovetail 17^b. The abutting rear faces of the sections are soldered or otherwise secured together.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. A sound augmenting horn, comprising a tapered cuff having an annular external shoulder between its ends, a horn body secured to the cuff, a tapered reducing sleeve that detachably fits upon the cuff and has one end abutting against the shoulder, said sleeve having an internal shoulder that abuts against the end of the cuff, and means for detachably securing the sleeve to the cuff.

2. A sound augmenting horn angular in cross section and comprising tapered sections, each section being longitudinally curved and transversely flat and each having its opposite side margins formed into continuous longitudinal dovetails, and tie strips located between the sections, each strip having longitudinal dovetailed sockets in its opposite sides that are angularly disposed with relation to each other and receive the adjacent dovetailed margins of the adjacent sections, binding elements engaging the ends of the sections, and holding elements connecting the binding elements and having portions interlocked therewith.

3. A sound augmenting horn, comprising sections, binding elements engaging the ends of the sections, and holding elements connecting the binding elements and having portions interlocked therewith.

4. A sound augmenting horn, comprising sections, binding elements engaging the ends of the sections, and holding elements connecting the binding elements, one set of elements being provided with sockets, the other having tongues that engage in the sockets.

5. A sound augmenting horn, comprising sections, binding elements engaging the ends of the sections and having sockets in their end portions, and holding clips connecting the end portions of the binding elements and having tongues that engage in the sockets.

6. A sound augmenting horn, comprising sections, tie strips connecting the longitudinal margins of the sections, binding strips engaging the ends of the sections, and clips secured to the strips and having portions interlocked with the end portions of the binding strips.

7. A sound augmenting horn, comprising sections, tie strips located between and embracing the longitudinal margins of the sections, binding strips engaging the ends of the sections and having sockets in their end portions, and clips secured to the outer ends of the tie strips, and having spaced inwardly extending tongues that engage in the sockets of the binding strips.

8. A sound augmenting horn, comprising sections, each section consisting of a plurality of layers of veneer, tie strips located between the longitudinal margins of the sections and having dovetailed connections therewith, binding strips covering the outer ends of the section and having their end portions abutted and provided with sockets, and clips covering the outer ends of the tie strips and binding strips and secured to said tie strips, said clips having inwardly extending tongues that engage in the sockets of the binding strips.

9. A sound augmenting horn, comprising a tapered cuff, sections having their inner ends fitted into the cuff, tie strips located between and secured to the sections, said strips having their inner ends located in and secured to the cuff, a tapered reducing sleeve having its larger end detachably fitting upon the cuff, said sleeve being provided at its smaller end with a tubular nipple, and a screw for detachably securing the sleeve to the cuff.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

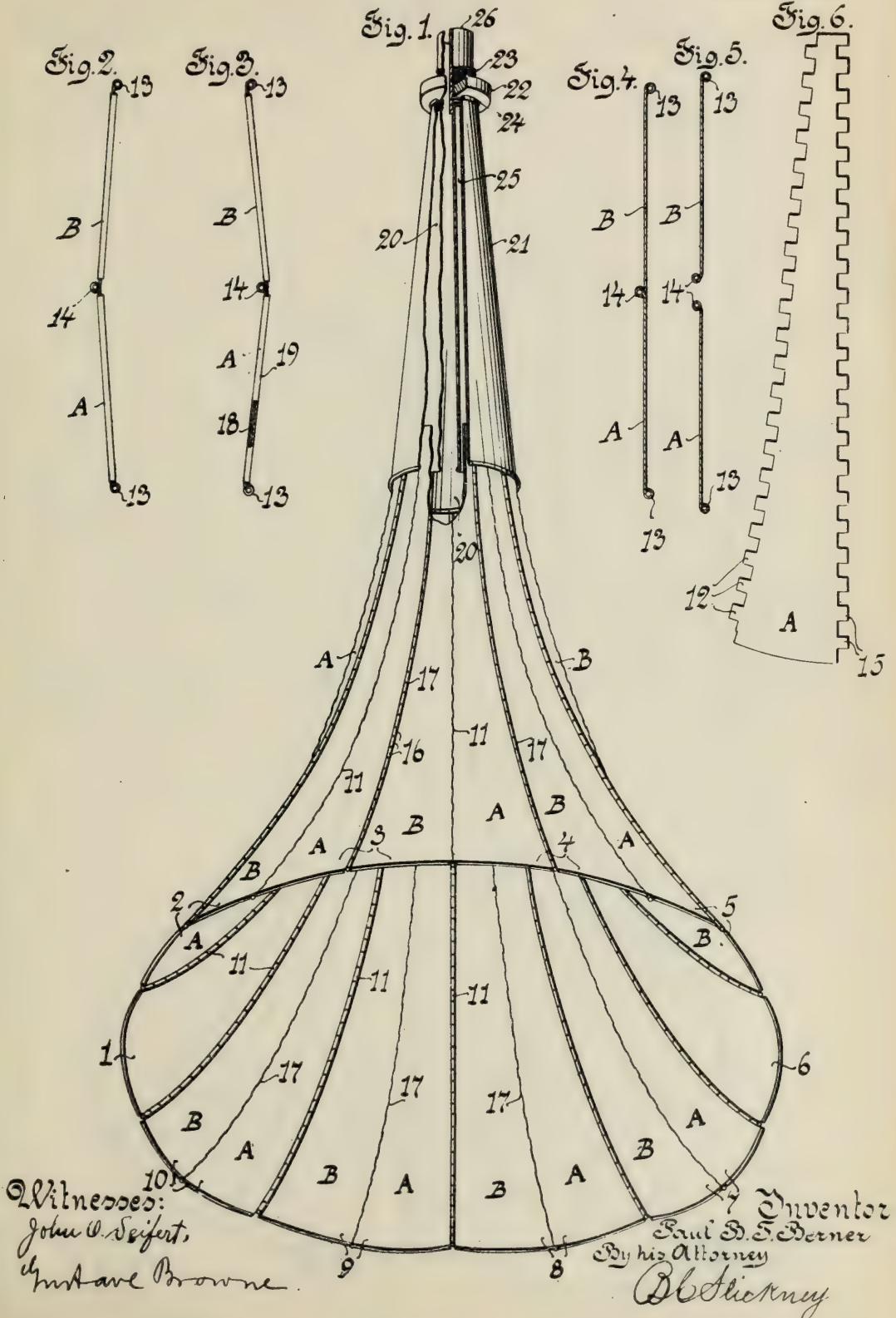
ALFRED R. CUNNIUS.

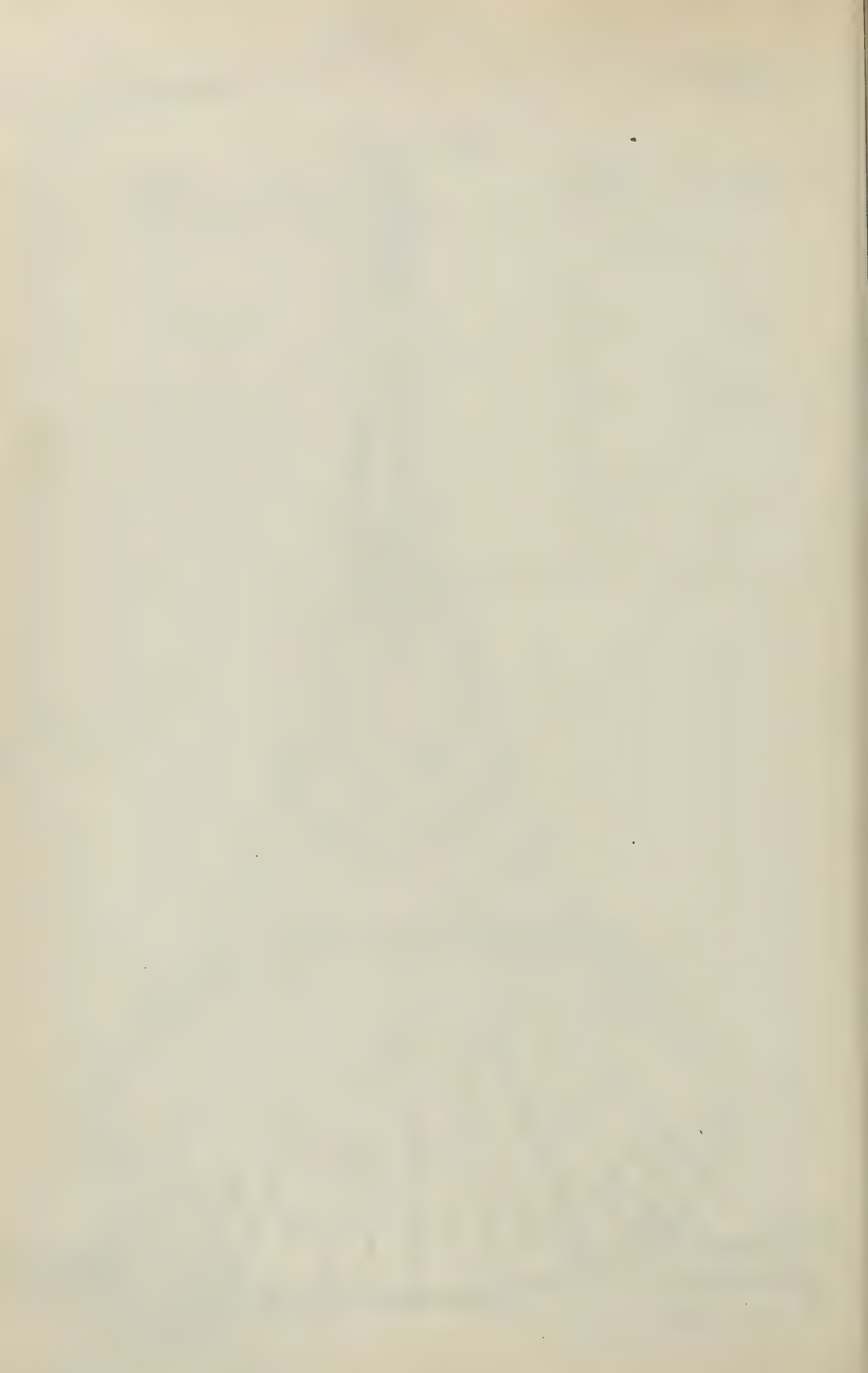
Witnesses:

MICHAEL SCHREINER,

THOS. F. WRIGHT.

[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit 47. Filed Apr. 8, 1916. F. D. Monckton, Clerk.





926,235.

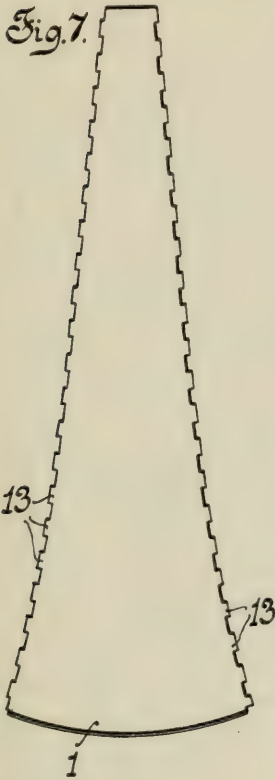
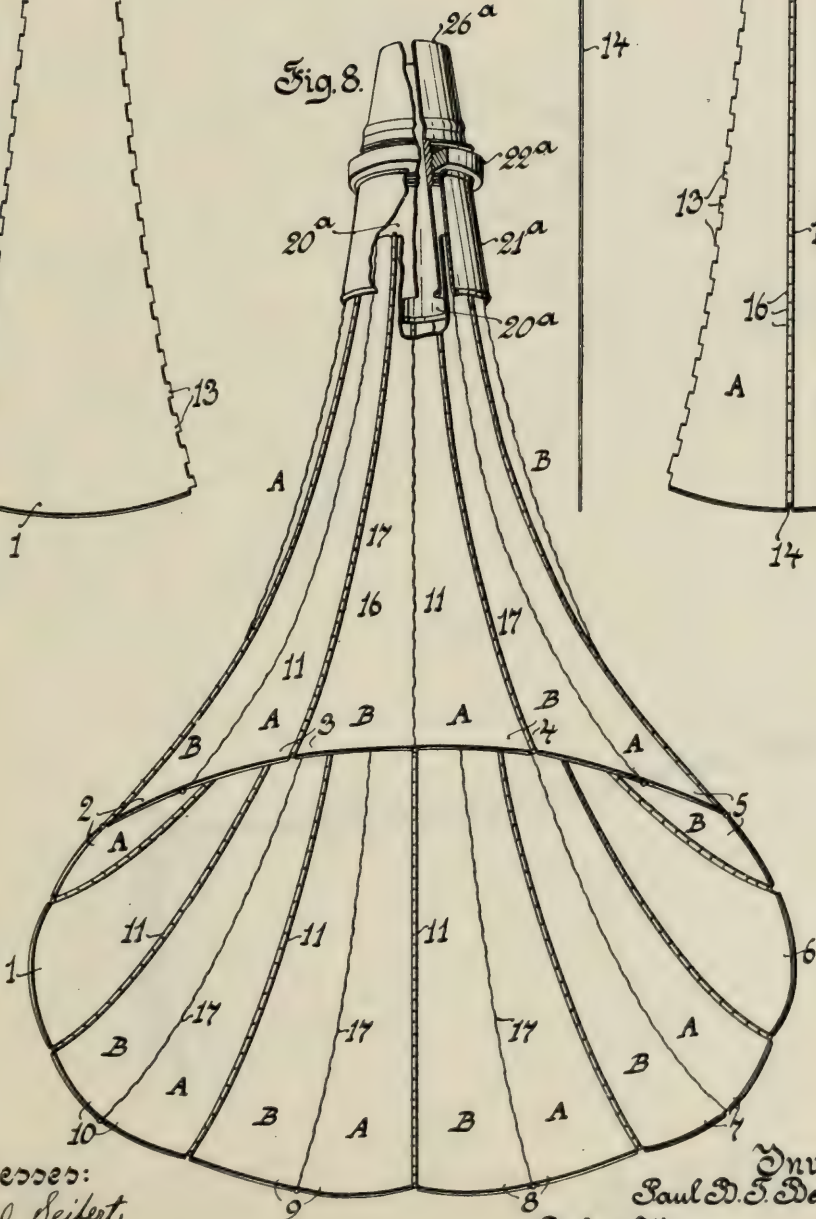
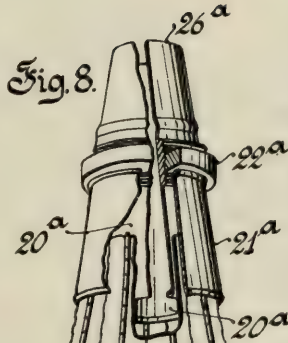
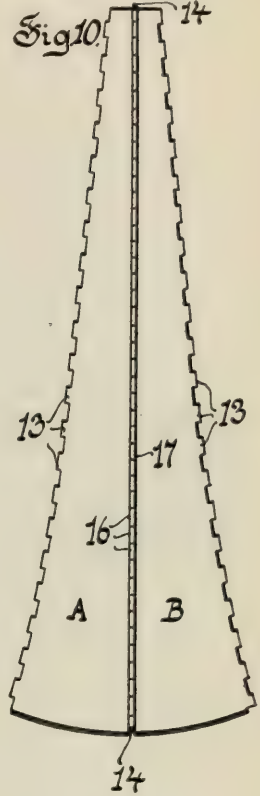


Fig. 9.



Witnesses:
 John C. Seifert.
 Arthur Brown.

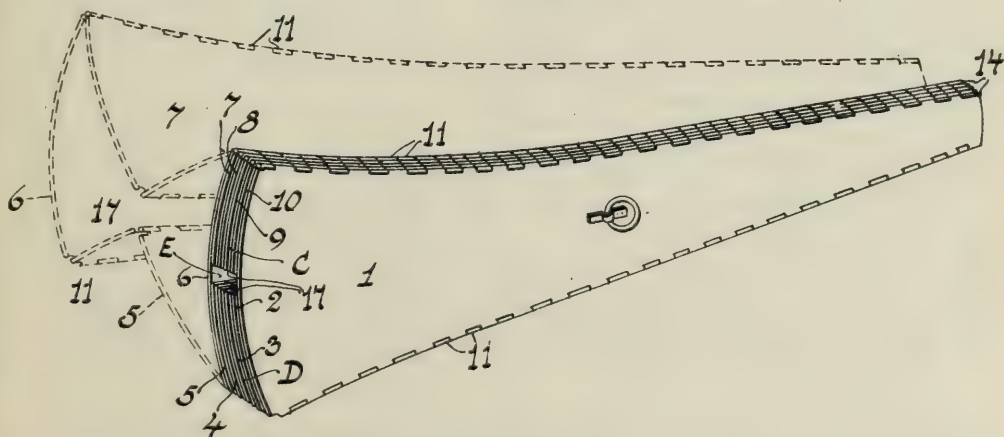
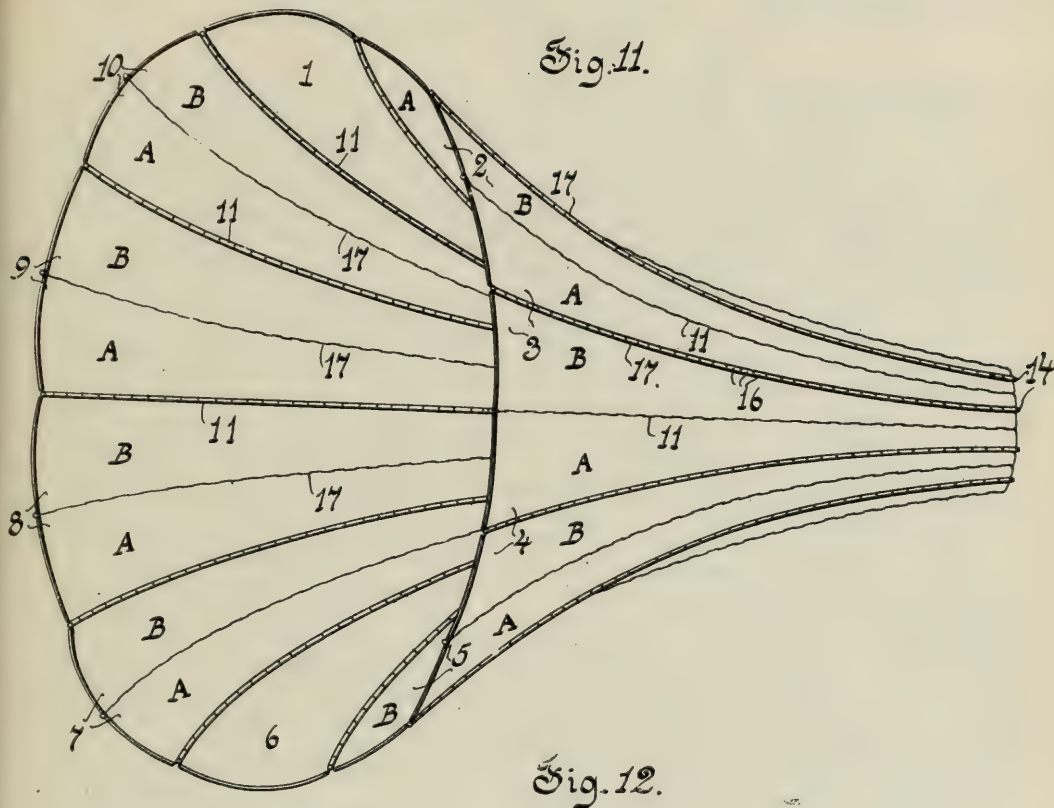
Inventor
 Paul D. S. Berner
 By his Attorney
 R. C. Stickney



P. B. T. BERNER.
 PHONOGRAPH HORN.
 APPLICATION FILED AUG. 19, 1907.

926,235.

Patented June 29, 1909.
 3 SHEETS—SHEET 3.



Witnesses:
 John D. Seifert.
 Charles Brown.

Inventor
 Paul D. T. Berner
 By his Attorney
 R. H. Smith



UNITED STATES PATENT OFFICE.

PAUL B. T. BERNER, OF NEW YORK, N. Y., ASSIGNOR TO SEARCHLIGHT HORN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

PHONOGRAPH-HORN.

No. 926,235.

Specification of Letters Patent.

Patented June 29, 1909.

Application filed August 19, 1907. Serial No. 389,188.

to all whom it may concern:

Be it known that I, PAUL B. T. BERNER, citizen of the United States, residing in the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Phonograph-Horns, of which the following is a specification.

This invention relates to phonograph horns and like instruments, the bells of which are usually built up of a series of sections, the latter generally having curved side edges which give the desired contour to the bell; and in certain respects it is in the nature of an improvement on the horns shown in United States Patents 12,442 of January 30, 1906, and 771,441 of October 4, 1904.

One of the principal objects of my invention is to simplify the construction and reduce the cost of the built-up bell of a phonograph horn. To this end, I make the sections of thin flexible sheet metal, usually with curved side edges, and join said curved edges together by means of wires passing through a series of eyes rolled or formed alternately in the contiguous sections. This method of joining the strips together is very simple and inexpensive.

A further object of the invention is to produce a horn which is capable of being folded or reduced in bulk for convenience in transportation or storage.

In carrying out this feature of the invention, I preferably form certain or all of said sections of two strips each as hereinafter described. This permits the strips to fold together in the manner of the plaits of a fan, so that all the strips can pack facewise against each other, thereby reducing the bulk to a minimum. In setting up the horn it is only necessary to expand the bell, which, owing largely to the outward buckling of the large sections of the strips, possesses sufficient rigidity for use.

Preferably each of two sections in the horn is a single, that is, formed of a single metal plate instead of being formed of two strips hinged together. These single plates or sections are placed opposite each other in the horn, so that when the same is folded, the plates or plaits form two sets which lie one

opposite the other between said single sections, so that the device very closely resembles a folded fan in form.

It will be understood that if the bell is not intended to be collapsible, all of the sections may be single instead of formed each of a pair of strips hinged together; the novel method of hinging the sections together even in a non-collapsible horn being preferable to methods heretofore in vogue.

The neck of the bell, whether collapsible or not, may be provided with any suitable funnel or means to connect the same to a phonograph as hereinafter described.

In the following I have described, in connection with the accompanying drawings, one form of device illustrating the carrying out of my invention.

In the accompanying drawings, Figure 1 is a view of a phonograph horn embodying my several improvements in one form; parts being broken away to disclose the invention more clearly. Figs. 2 and 3 are end views of a bell section, comprising two strips hinged together, and illustrates the buckling or springing of the strips when opening the bell. Fig. 4 is a sectional view to illustrate the hinging of the strips which form a bell section. Fig. 5 shows the Fig. 4 strips separated. Fig. 6 is a blank of one of the strips which make up the bell sections. Fig. 7 is one of the single or main sections of the bell, undivided into strips. Fig. 8 is a view of another construction of device for clamping the neck of a bell. Fig. 9 shows one of the wires which form the pintles to connect the strips and sections together. Fig. 10 is a view of two strips hinged together to form a section. Fig. 11 is a view of a detached opened bell. Fig. 12 shows the bell folded in full lines, and also, shows by dotted lines the manner of unfolding the same.

Similar letters and numerals of reference indicate similar parts throughout the several views.

The bell, which in this instance has the popular flower contour, is illustrated as made up of ten tapering flexible sheet metal sections, which have curved side edges to give the proper contour to the bell, and are

numbered from 1 to 10 inclusive. These sections are each permanently hinged to both adjoining sections, as at 11, said hinges 11 being on the inside of the horn and connecting said curved side edges. Along each of said side edges are originally stamped in each plate a succession of tongues 12, which are then bent, curled or rolled to form eyes 13, the eyes along one curved edge alternating with those along the contiguous curved edge and fitting therebetween, so that the eyes are all coincident or co-axial, as seen at 11, Fig. 1. Connection is then effected by means of a wire 14, thus joining each couple of sections together by means of a continuous hinge. By making each eye wholly on one side of the section, as seen best at Figs. 4 and 5, tight joints are produced, so that little, if any, light can be seen through the hinges, thus conducing to the excellence of the acoustic properties of the horn. It will be understood that the wires 14, considered either alone or in connection with the eyes 13, constitute stiffening ribs at the joints of the bell. This, furthermore, is a very substantial and durable method of connecting the sections and forming the bell, and may be resorted to even in cases where it is not desired to produce a foldable bell; and in such a case, the joints may be additionally stiffened by the use of a little solder, if desired, and the eyes may be on the outside instead of on the inside of the bell; and each of the sections may be in the form of a single or integral plate, as seen at Fig. 7.

One method of forming a collapsible horn consists in dividing each of the said sections into two strips, which are hinged together in the manner already described. A pair of such strips marked A and B is seen at Fig. 10. A blank for making such strips is seen at Fig. 6; tongues 15 being formed on the right hand side edge at said figure, which tongues are bent to form eyes 16. These eyes are connected by a wire 14, thereby forming a hinge similar to the hinge 11, with the exception that this hinge, marked 17, is straight as at Fig. 10, when the bell is folded, and that the hinge is on the outside of the bell, Fig. 1. Each of the strips A, B, therefore, has one straight side edge, along which edge the strips are joined to form a pair, such pair corresponding in dimensions to one of the sections above mentioned. The outer side edge of each strip diverges from the inner side edge from the neck to the mouth of the bell, Fig. 10.

The horn may be folded in the form seen in full lines at Fig. 12, by simply turning the strips upon the hinges alternately in and out in the manner of the plaits of a common fan, eight of the sections; or sixteen of said strips being treated in this manner, whereby two sets of strips or plaits, marked

respectively C and D, are folded and packed facewise together, one set opposite the other set. Preferably, sections 1 and 6 are undivided or formed each in a single integral piece, or plate, as shown, so that the sets of plaits C and D fold compactly between the sections 1 and 6, the rigidity of the latter sections being of value in making a comparatively stable package of the folded bell. Preferably, said sections 1 and 6 are made each a little wider than the remaining sections, so as to leave a clearance E between the sets of plaits C and D. This package, at Fig. 12 it will be seen, has minimum dimensions, being of a length equal to the length of the bell, and of a width equal to the width of one section, and of a thickness equal to the thickness of ten sections, so that it can be packed conveniently with a phonograph for shipment, and can be conveniently transported or stored by the user.

In opening the bell, from the Fig. 12 position to the Fig. 11 position, when the same is nearly open, each pair of strips is sprung outwardly from the Fig. 3 to the Fig. 2 position, near its outer edge, this characteristic of springing or buckling being due to the curvature of the outer side edge of each strip, where one section joins the next; and it contributes to the stiffness of the bell. It will be understood that the hinge wires 14 in the joints 17 are straight in the Fig. 1 position, but are flexed outwardly when the bell is opened; and it will also be understood that the strips A and B should be relatively narrow and long, as the use of a relatively large number in building up the bell renders it more convenient to fold and open the same.

It will be perceived that all of the strips are permanently connected, so that the structure is continuous, and for ordinary purposes inseparable at any point, whether open as at Figs. 1 and 11, or closed as at Fig. 10, so that in opening or closing, it is only necessary to unfold or fold as the case may be without the necessity of manually joining or disjoining any of the sections. This form of joint between the sections is valuable, because undue springing or tensioning of the metal in forming seams, as heretofore generally practiced, is avoided, and hence the bell delivers the sounds more clearly than prior horns of this type. At its outer end each of the strips or sections is rolled over wire 18 as seen at 19, Fig. 3, thus to stiffen the bell and protect said edge from injury.

In assembling the horn, after the bell opened, I preferably insert a funnel or tapering tube 20, whose large end fits close within the tapering neck of the bell. Over this funnel, I place a second funnel 21 which fits over said bell neck; and a nut 22 is turned upon a threaded projecting portion 23 of the inner funnel, and bears upon

against the end 24 of the outer funnel to force the same up over the bell neck, and simultaneously draw the funnel 20 outwardly within said neck. The funnel 21 tends to wedge the neck inwardly while the funnel 20 tends to wedge the neck outwardly, and as a result the neck is firmly clamped between said funnels, thus producing a rigid and substantial phonograph horn. An air space 25 is formed between said funnels, and tends to avoid faulty acoustic action. A nipple 26 is formed on the inner funnel beyond the threaded part 23.

At Fig. 8 is shown a form of funnel or tip for a bell adapted to another style of phonograph from the Fig. 1 construction. In this case, the tip 26^a is tapering, and the funnel 20^a is relatively short, while the outer funnel 21^a is so short as to be little more than a ferrule to bind the neck of the horn against the inner funnel; this being accomplished by a nut 22^a of relatively large diameter.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. A flaring-mouth and approximately circular bell forming part of a phonograph horn, comprising a series of flexible sheet metal strips joined edge to edge by means of metal hinges, the latter consisting of ears formed on the strips and wire pintles passing through the ears, and means to stiffen the small end of the bell.

2. An approximately circular bell forming part of a phonograph horn, comprising a series of metal strips, every one of which is permanently connected by means of movable joints to both of the adjoining strips, the joints and strips sufficiently flexible to permit the bell to flare at its mouth, and means to stiffen the small end of the bell.

3. A collapsible bell for a phonograph horn comprising a series of strips connected together at their side edges by hinged joints, said joints folding inwardly and outwardly alternately.

4. A collapsible bell for a phonograph horn comprising a series of strips connected together at their side edges by hinged joints, two of said strips being wider than the remainder and separated from each other by other strips arranged in pairs, the jointed edges of which latter fold inwardly and outwardly alternately.

5. A collapsible bell for a phonograph horn comprising a series of strips connected together at their side edges by hinged joints, said strips being arranged in pairs, the inner edges of the strips in each pair being straight and the outer edges of the strips in each pair being curved, the hinged joints of said straight edges folding inwardly and those of the curved edges folding outwardly.

6. A collapsible bell for a phonograph horn comprising a series of strips connected together by hinged joints, at least one of said strips being broader than the others and the remainder of said strips being arranged in pairs, the hinged joints of which latter fold inwardly and outwardly alternately.

7. A collapsible bell for a phonograph horn comprising a series of strips connected together by hinged joints, some of said strips being arranged in pairs, the hinged joints between the strips being alternately on the inside and the outside of the bell.

8. A collapsible bell for a phonograph horn comprising a series of strips connected together at their side edges by hinged joints, two of said strips being wider than the remainder, provided with curved edges and diametrically disposed with reference to each other and the intervening strips being arranged in pairs, the inner edges of the strips in each pair being straight, and the outer edges in each pair being curved, whereby the paired strips when collapsed form two groups of plaits intermediate the broader strips.

9. A collapsible bell for a phonograph horn, comprising in its collapsed condition two sections, each having curved side edges, said sections being connected by means of two sets of relatively narrow strips, the strips in each set being connected to one another and to the outside sections by means of hinges.

10. A collapsible bell for a phonograph horn, comprising in its collapsed condition two sections, each having curved side edges, said sections being connected by means of two sets of relatively narrow strips, the strips in each set being connected to one another and to the outside sections by means of hinges, each narrow strip having an outer curved edge and an inner straight edge.

11. A collapsible bell for a phonograph horn, comprising in its collapsed condition two sections, each having curved side edges, said sections being connected by means of two sets of relatively narrow strips, the strips in each set being connected to one another and to the outside sections by means of hinges, each narrow strip having an outer curved edge and an inner straight edge, the curvature of the outer edges of said strips agreeing with the curvature of the edges of said outside sections.

12. A phonograph horn comprising a series of strips connected together at their side edges by movable joints, said strips arranged in pairs, the inner edges of the strips in each pair being straight, and the outer edges of the strips in each pair being curved to give the desired contour to the bell.

13. A phonograph horn comprising a series of strips connected together at their side edges by movable joints, said strips ar-

ruled in pairs, the inner edges of the strips in each pair being straight, and the outer edges of the strips in each pair being curved to give the desired contour to the bell; said bell also comprising a plurality of sections about equal in width to a pair of said strips, and having curved side edges.

14. A phonograph horn comprising a series of strips connected together at their side edges by movable joints, said strips arranged in pairs, the leading edges of the strips in each pair being straight, and the outer edges of the strips in each pair being curved to give the desired contour to the bell; said bell also comprising a plurality of sections about equal in width to a pair of said strips, and having curved side edges, each of which is loosely jointed to one of the outer edges of a pair of said strips.

15. A bell for a phonograph horn comprising a series of sheet metal strips, each having a set of hinge eyes formed along each side edge to alternate with the eyes of the adjoining strip, and wires threaded through the eyes to connect the strips.

16. A bell for a phonograph horn comprising a series of sheet metal strips, each having a set of hinge eyes formed along each side edge to alternate with the eyes of the adjoining strip, and wires threaded through the eyes to connect the strips, certain of said side edges being curved, and said wires forming flexible pintles to permit the bell to collapse.

17. An approximately circular bell forming part of a phonograph horn comprising a series of sheet metal strips, every one of which is permanently hinged at its side edges to both of the adjoining strips, by means of hinge ears formed upon the strips and flexible pintles passing through the ears, and means to stiffen the small end of the bell.

18. An approximately circular bell forming part of a phonograph comprising a series of strips having a succession of eyes formed along each side edge and integral with their respective strips, wires passing through said eyes to join the strips together, and means to stiffen the small end of the bell.

19. A collapsible bell for a phonograph horn comprising strips hinged together at their side edges, and foldable one upon another in the manner of a plaiting, said strips having a straight contour along their inner side edges, and a curved contour along their outer side edges.

20. A collapsible bell for a phonograph horn comprising strips hinged together at their side edges, and foldable one upon another in the manner of a plaiting, said strips having a straight contour along their inner side edge, and a curved contour along their outer side edges, said horn also comprising two broad sections similarly connected to the

strips, each broad section of slightly greater width than a pair of said strips, and the strips being folded in two sets between said broad sections.

21. A collapsible approximately circular bell forming part of a phonograph horn comprising a series of strips, every one of which is connected at its side edges by means of movable joints to both of the adjoining strips in a manner to permit the folding of the horn to pack all the strips face-wise together; said strips and joints so shaped and so flexible as to cause the bell to flare at its mouth, and means to stiffen the small end of the bell.

22. A bell for a phonograph horn comprising two sets of strips, each set comprising four pairs, and two broad sections, the strips in each set hinged each to the next along its side edges, and said sets being opposed to each other and hinged to the side edges of said broad sections.

23. As a new article of manufacture, a series of phonograph horn strips hinged each to the next along their side edges, said strips comprising a number of pairs, the strips in each pair being straight-edged along the joint which unites them, and having their outer side edges curved to form the contour of the horn.

24. As a new article of manufacture, a metal strip to form a plait or section of a phonograph horn, said strip having one side edge straight, and the other side edge curved.

25. As a new article of manufacture, a metal strip to form a plait or section of a phonograph horn, said strip having one side edge straight, and the other side edge curved; tongues being formed along each of said side edges and bent to form eyes to receive a connecting wire.

26. A bell for a phonograph horn comprising strips mounted in pairs, the strips in each pair hinged each to the other along a straight line, the outer edges of the pairs being divergent from each other, and each pair hinged to the next.

27. As a new article of manufacture, a series of phonograph horn strips hinged each to the next along their side edges, said strips comprising a number of pairs, the strips in each pair being straight-edged along the joint which unites them, and having their outer side edges shaped to form the contour of the horn and provided with tongues to receive joining wires.

28. A pair of metal strips joined together to form a section of a phonograph horn, each of said strips having its inner side edge straight, the joint between said strips extending along the median line of said section, and the outer side edges of said strips diverging from each other.

29. As a new article of manufacture, a flexible metal section of a phonograph horn,

both side edges curved; tongues being formed along one of said side edges and bent to form eyes to receive a connecting wire.

5 30. As a new article of manufacture, a flexible metal section of a phonograph horn, both side edges curved; tongues being formed along each of said side edges and bent to form eyes to receive a connecting
10 wire.

31. A pair of metal strips joined together to form a section of a phonograph horn, each of said strips having its inner side edge straight, the joint between said strips extending along the median line of said section, and the outer side edges of said strips diverging from each other; and formed with hinge eyes.

32. As a new article of manufacture, a series of phonograph-horn tapering strips of flexible sheet metal formed along their side edges with tongues bent to form eyes, the eyes on each strip alternating with those of the contiguous strip, and wires passing through the eyes to connect the strips together.

33. A flaring-mouth approximately circular bell forming part of a phonograph horn comprising tapering sections of sheet metal, each of said sections having curved side edges, said side edges permanently connected together by means of eyes provided along said curved edges, and wires passing through the eyes.

34. A bell for a phonograph horn comprising tapering sections of sheet metal, each of said sections having curved side edges, said side edges permanently connected together by means of eyes provided along said curved edges, and wires passing through the eyes; certain of said sections consisting each of a pair of strips hinged together at their contiguous edges.

35. A bell for a phonograph horn comprising tapering sections of sheet metal, each of said sections having curved side edges, said side edges permanently connected together by means of eyes provided along said curved edges, and wires passing through the eyes; certain of said sections consisting each of a pair of strips hinged together at their contiguous edges; the section hinges being on the outer side of the horn, and the strip hinges being on the inner side thereof.

36. A phonograph horn comprising a bell, a funnel fitting within the small end of the bell and having a screw thread at its small end, a second funnel inclosing the first funnel and also fitting over the small end of the bell, and a nut upon said threaded portion to bear against the small end of the outer funnel to force the latter up onto the bell and draw the first funnel down within the bell, thereby to clamp the bell between said funnels.

37. A phonograph horn comprising a collapsible bell, an inner detachable ferrule and an outer detachable ferrule for the small end of said bell, and means for causing said ferrules to clamp the bell.

38. A phonograph horn comprising a bell, funnels one within the other and fitting respectively within and without the small end of said bell, and means for effecting relative bell-clamping movement between said funnels.

39. A phonograph horn comprising a bell, funnels one within the other and fitting respectively within and without the small end of said bell, and means for effecting relative endwise bell-clamping movement between said funnels.

40. A phonograph horn comprising a bell having a tapering small end, funnels of corresponding taper and arranged one within the other and fitting respectively within and without said end of the bell, and means for moving one funnel upon the other in a manner to clamp the bell.

41. A phonograph horn comprising a bell having a tapering small end, funnels of corresponding taper and arranged one within the other and fitting respectively within and without said end of the bell, said funnels being relatively movable endwise to clamp the bell between them, and means to secure the funnels in clamping position.

42. An approximately circular phonograph horn comprising a collapsible bell composed of a series of strips connected together at their side edges by hinged joints, said bell having a tapering small end, a funnel fitting said end, and an annular device for stiffening the small end of the bell and securing it to said funnel.

43. A phonograph horn comprising a bell and two funnels one within the other and connected to said bell.

44. A phonograph horn comprising a bell and two funnels one within the other, and connected to said bell; an air space intervening between said funnels.

45. A phonograph horn comprising a collapsible bell having a tapering neck, a funnel fitting in said neck, and means inclosing said neck, and connected to said funnel for drawing the latter down tightly into said neck.

46. A bell for a phonograph horn comprising a number of flexible sections of sheet metal having curved side edges connected by metal hinges.

47. A flaring-mouth bell forming part of a phonograph horn and comprising a number of flexible sections of sheet metal having side edges all of which are permanently connected by metal hinges.

48. A phonograph horn having a collapsible bell comprising a number of flexible strips having jointed side edges, a funnel

1117

inserted within the neck of said bell, and means inclosing said neck to draw said funnel down and clamp the neck thereto.

12. A phonograph horn having a bell comprising a number of flexible strips having side edges permanently hinged together, a funnel inserted within the neck of said bell,

a second funnel inclosing said neck, and means for causing said second funnel to clamp said neck.

PAUL B. T. BERNER.

Witnesses:

JOHN O. SEIFERT,
KITTIE FRANKFORT.

[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit 44. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

No. 811,877.

PATENTED FEB. 6, 1906.

C. A. SENNÉ.
PHONOGRAPH HORN.

APPLICATION FILED NOV. 1, 1904.

2 SHEETS—SHEET 1.

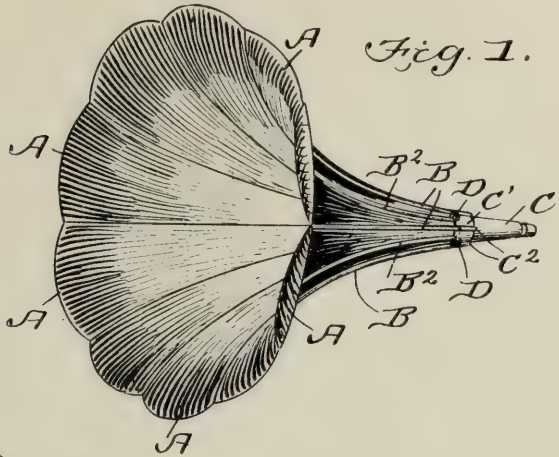


Fig. 1.

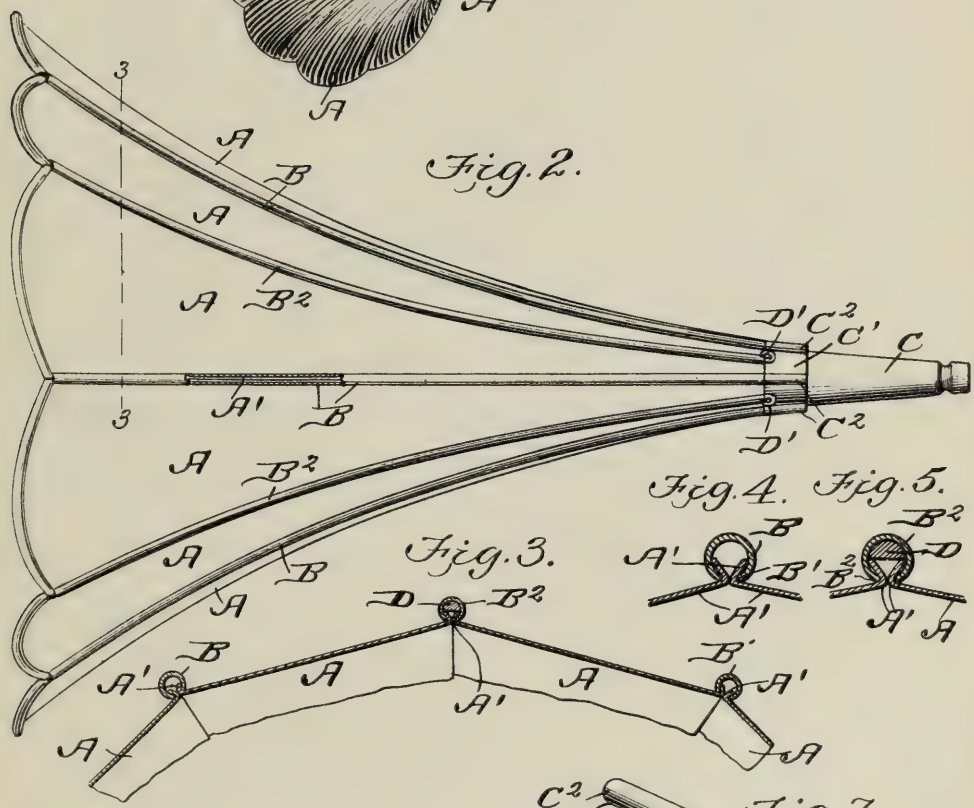


Fig. 2.

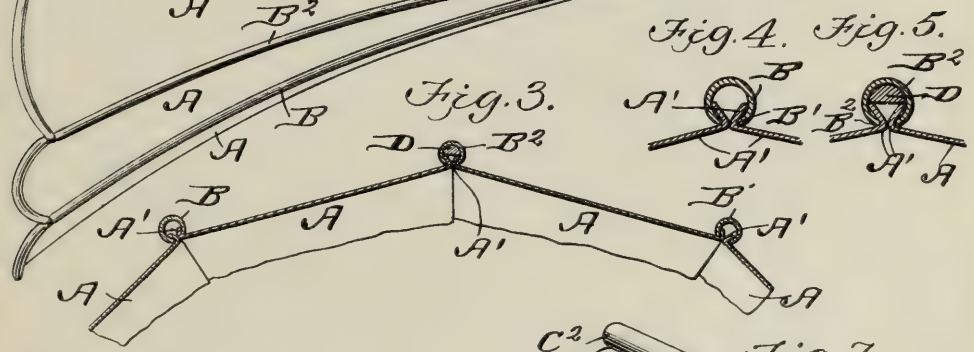


Fig. 3.

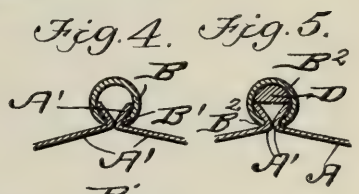


Fig. 4.

Fig. 5.

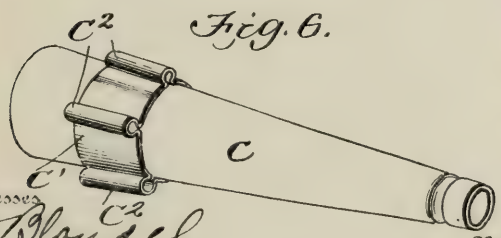


Fig. 6.

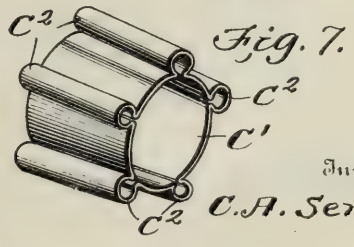
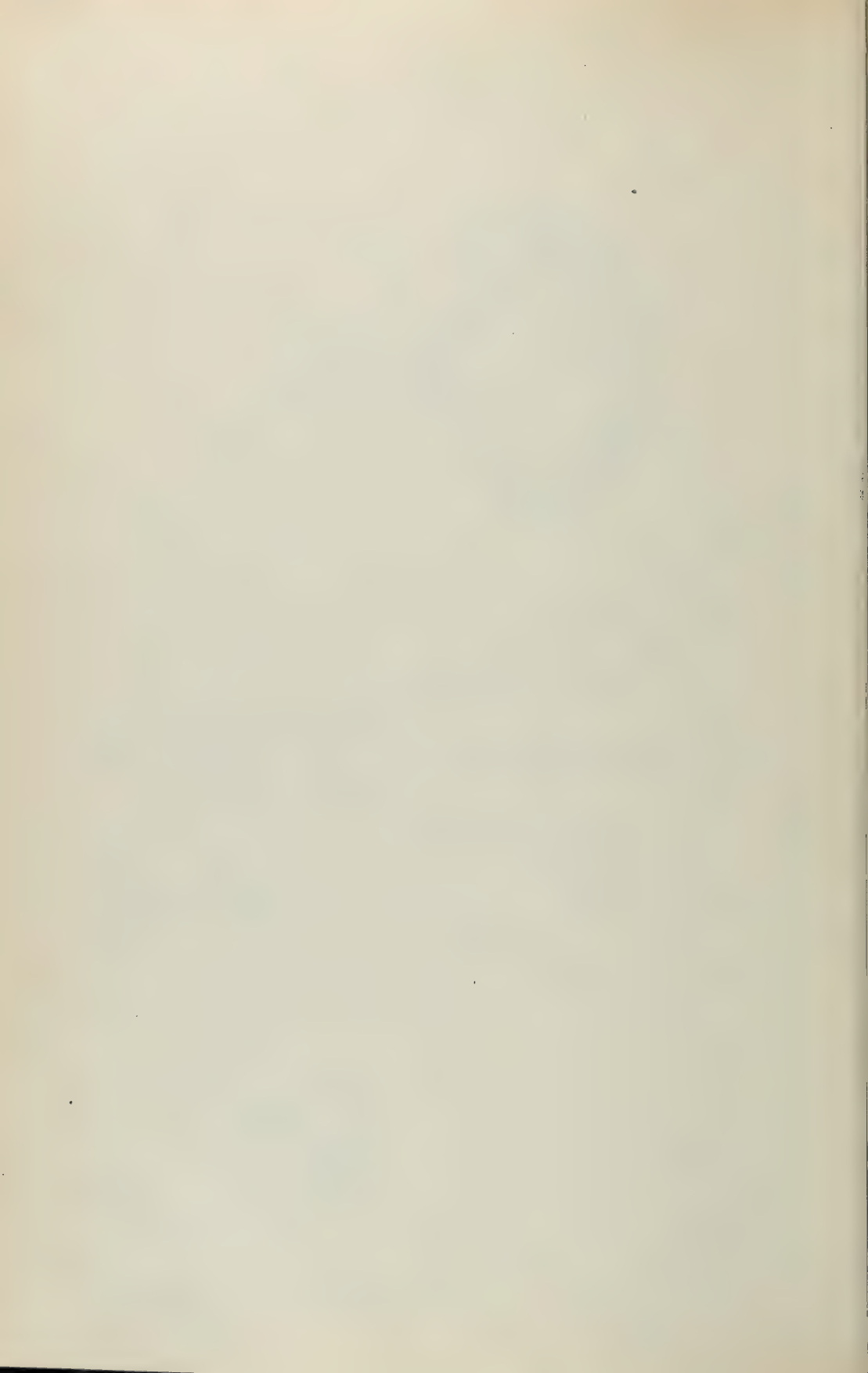


Fig. 7.

Witnesses
M. J. Blondel,
E. B. McBeth.

Inventor
C. A. Senné.
O'Meara & Brock
Attorneys.



No. 811,877.

PATENTED FEB. 6, 1906.

C. A. SENNÉ.
PHONOGRAPH HORN.
APPLICATION FILED NOV. 1, 1904.

2 SHEETS—SHEET 2.

Fig. 8.

Fig. 9.

Fig. 9^a.

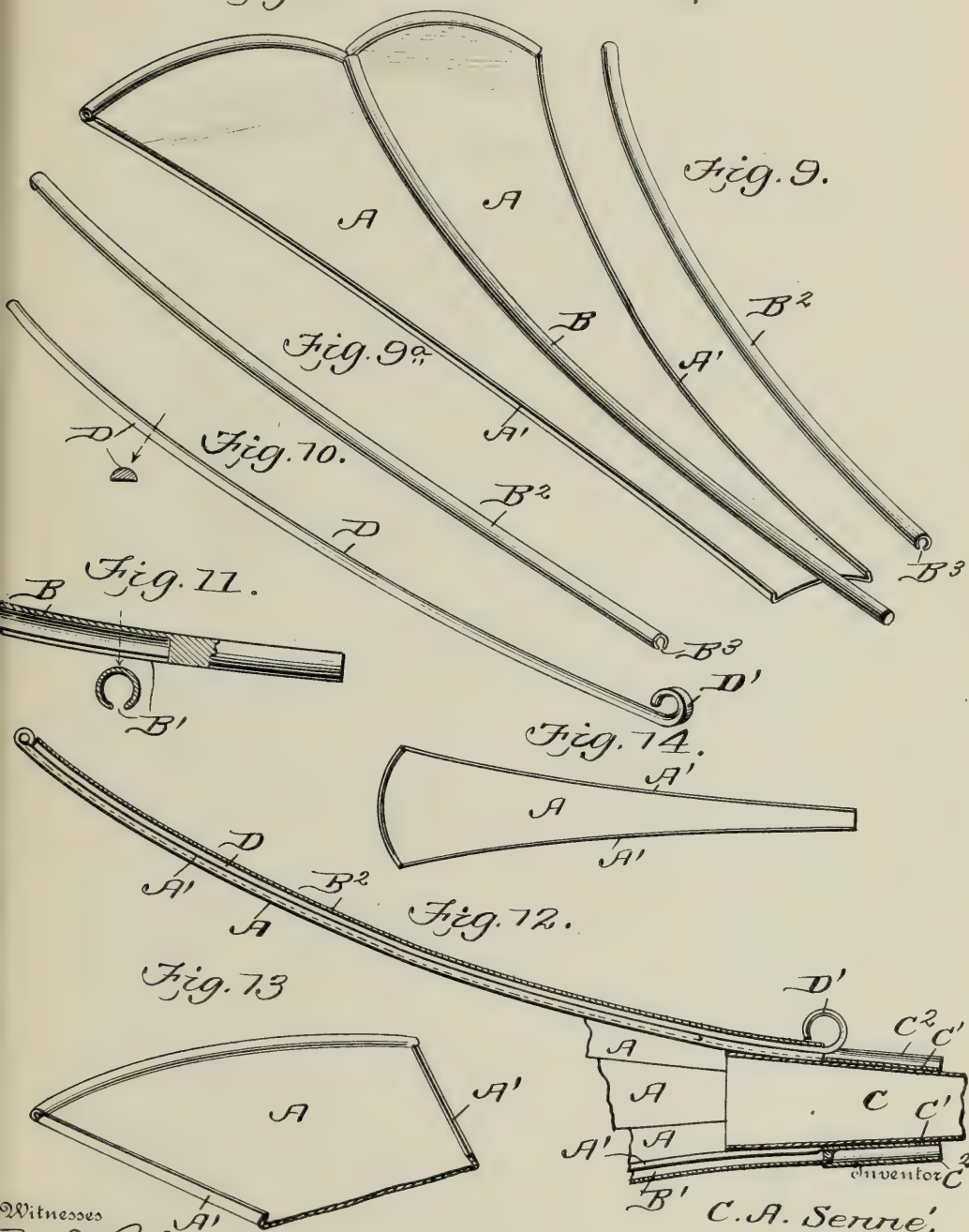
Fig. 10.

Fig. 11.

Fig. 14.

Fig. 12.

Fig. 13.



Witnesses

McCloud,
E. B. McBath.

By C. A. Senné,
Attorneys.

CAMILLUS ANTONETTE SENNÉ, OF NEW YORK, N. Y.

PHONOGRAPH-HORN.

No. 811,877.

Specification of Letters Patent.

Patented Feb. 6, 1906.

Application filed November 1, 1904. Serial No. 231,003.

To all whom it may concern:

Be it known that I, CAMILLUS ANTONETTE SENNÉ, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a new and useful Improved Phonograph-Horn, of which the following is a specification.

This invention relates to an improved collapsible horn especially designed for use in connection with phonographs and the like, the object being to provide a horn that may be "knocked down," so that it may be readily packed in a small space and also that its transportation may be facilitated.

With these briefly-stated objects in view, the invention consists in providing a series of blades or sections, each having their edges formed with flanges over which is secured a locking-rib, by which the sections are securely held together, and sleeves having tubular portions engaging alternate ribs, the device as a whole being in the shape of a horn.

The invention also comprises means for holding the horn to the tube-nozzle, which is also employed for locking the sections and holding the horn in a perfectly secure condition.

The invention further consists in certain details of construction and novelties and combinations of parts as will be fully described in the following specification and pointed out in the claims, reference being had to the drawings, in which—

Figure 1 is a perspective view of a horn constructed in accordance with my invention. Fig. 2 is a plan view of the same. Fig. 3 is a detail section on the line 3 3 of Fig. 2. Figs. 4 and 5 are enlarged detail sections drawn through the uniting-ribs and flanges. Fig. 6 is a detail perspective view of the tube-nozzle, showing my improvement arranged therein. Fig. 7 is a detail perspective view of my improved sleeve that fits upon the tube-nozzle. Fig. 8 is a detail perspective view of one of the sections of the horn. Figs. 9 and 9^a are detail views of the hollow uniting-ribs. Fig. 10 is a detail view of one of the strips which are arranged in the ribs. Fig. 11 is a detail section of the inner end of one form of uniting-rib. Fig. 12 is a longitudinal section drawn through one of the uniting-ribs and the tube-nozzle. Fig. 13 is a detail perspective view of the outer end of one of the blades, and Fig. 14 is a detail plan view of a complete blade.

In constructing a horn in accordance with

my invention, I employ a series of blades or strips A, which may be of any suitable material, each being wider at its outer end and tapering upon a curved line to its inner end, so that when all of the blades are assembled they will produce a horn having a flaring mouth, or, in other words, bell-shaped; but this special design is not essential, as the tapering blades may be perfectly straight upon their longitudinal edges, in which case a horn shaped like a truncated cone will be produced. The longitudinal edges of each blade are bent outwardly and inwardly to provide a flange A', over which is placed a tubular rib B, having slots B' arranged upon their lower longitudinal surface through which the flanges project, and by bending the flanges, as described, when the ribs are arranged thereon the sections will be firmly and securely locked together. In practice I propose to arrange these blades in pairs or sections, as shown in Fig. 8 of the drawings, and to permanently retain the ribs B thereon and to provide the ribs of a greater length than the blades, so that their inner ends will project slightly beyond the inner ends of the sections, the projected ends being made solid to add strength to the ribs. In order to hold these sections in position, I provide a tube-nozzle C with a sleeve or band C', which is made of a single length of material and bent at regular intervals to provide a series of tubular sections or barrels C², and in these barrels the projecting ends of the ribs B are held when the horn is complete. As the blades are arranged in sections, as before described, and the ribs B employed for holding the sections together the opposite flanged edges of each section will be free, and to unite them I employ tubular ribs B², slotted throughout their entire length, as shown at B³, and in practice the ribs B² are slipped over the flanges from their inner ends and pushed thereon until the entire surface of the flanges is covered. Of course it will be understood that these ribs B² are of a length to equal that of the longitudinal edges of the blades A, and in order to securely hold them in position and to securely lock them in position I employ strips D, semicircular in cross-section, which are inserted in the ribs so that their flat surface will engage the edges of the flanges, and their circular edges will engage the inner surface of the ribs and in order to facilitate the withdrawal of the strips D and also their insertion into the ribs I propose to

A 22

bend their inner ends back upon themselves, as shown at D'.

In setting up a horn constructed like my invention I first place the sleeve C' upon the hose-nozzle and then take the sections formed by the blades A and insert the projecting ends of the ribs into each of the tubular sections or barrels C'. The ribs B² are then pushed over the flanges of the abutting blades, the strips D inserted into the ribs B², and the complete horn is then produced. It will be readily seen that this operation is exceedingly simple, and it is only necessary to withdraw the ribs and strips from the sections and each section disconnected from the nozzle-tube and the sections may be readily packed into a very small space.

In practice I prefer to bend the free ends of the blades at their outer ends back upon the body of the blade in a circular form and to insert a wire therein, which adds to the artistic effect of the device, besides strengthening the outer ends of the blades as well as avoiding sharp surfaces.

From the foregoing it will also be seen that I provide a collapsible horn so constructed that will take up very little space when in a knocked-down form.

I have found from actual experience that when the horn is set up the vibrations caused by the sound are not impaired and a perfectly clear tone is produced.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A horn comprising a series of blades, each having flanges upon their longitudinal edges, ribs engaging said flanges, and a sleeve having tubular portions in which the alternate ribs are held.

2. A horn comprising a series of blades, each having flanges upon their longitudinal edges, ribs engaging said flanges, a sleeve having tubular portions in which the alternate ribs are held, and a tube-nozzle for supporting the said sleeve.

3. A horn comprising a series of blades, each having flanges upon their longitudinal edges, ribs engaging the flanges, the alternate ribs projecting beyond the inner ends of the blades, a sleeve having tubular sections in which the projecting ends of the ribs are held, a tube-nozzle for supporting the sleeve and strips engaging the remaining alternate ribs.

4. A horn comprising a series of flanged blades arranged in pairs, the blades of each pair being united by means of ribs which extend beyond the inner ends of the blades, tubular ribs for uniting the abutting edges of each pair, and means for engaging the projecting ends of the first-named ribs.

5. A horn comprising a series of blades arranged in pairs each pair having a rib projecting therefrom, a sleeve having tubular portions in which the projected ends of the

ribs are held, tubular ribs for uniting the edges of each pair of blades, strips arranged within the said tubular ribs, and a tube-nozzle for supporting the sleeve.

6. A horn comprising a series of tapering blades, each being flanged upon their longitudinal edges, tubular ribs engaging the abutting flanges of each blade for locking the blades together, the alternate ribs projecting beyond the inner ends of blades, a sleeve having tubular sections in which the projecting ends of the ribs are held, and a tube-nozzle for supporting the sleeve.

7. A horn comprising a series of blades, each being tapered from its outer to its inner end, and flanged along the said tapering edges, tubular ribs engaging the flanges for uniting the blades, the alternate ribs projecting beyond the blades and made solid, strips arranged within the opposite alternate ribs, and a sleeve connected to the projected ends of the ribs.

8. A horn of the kind described, comprising a series of tapering blades arranged in pairs, each blade being flanged upon its longitudinal tapering edges, said blades being arranged in pairs, ribs engaging the flanges to unite the blades to form the pairs, said ribs projecting beyond the inner ends of each pair, a sleeve having tubular portions in which the projected ends of the ribs are held, tubular ribs engaging the abutting flanges of each pair, and strips arranged within the last-named ribs.

9. A horn of the kind described, comprising a series of tapering blades, each having a flange upon its longitudinal edges, said blades being arranged in pairs, and held together by tubular ribs, the ends of which project beyond the inner ends of the blades, a sleeve having tubular portions in which the projected ends of the ribs are held, tubular ribs engaging the abutting flanges of each pair of blades, strips arranged within the last mentioned ribs and engaging the flanges of the blades for the purpose specified.

10. A horn comprising a series of longitudinal tapering blades, each having its longitudinal edges bent outwardly and inward to form flanges which diverge when the abutting edges of the flanges are placed together, tubular ribs fitting over the flanges, the alternate ribs projecting beyond the inner ends of the blades, a sleeve having tubular sections in which the said projecting ends of the ribs are held, the remaining alternate ribs being of the same length as the blades, and strips arranged within the last-mentioned ribs, said strips having one end bent to provide a rib substantially as and for the purpose specified.

CAMILLUS ANTONETTE SENNE.

Witnesses:

M. D. BLONDEL,

E. M. VERNY.

[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit 39. Filed Apr. 8, 1916. F. D. Monekton, Clerk.

No. 829,066.

PATENTED AUG. 21, 1906.

W. S. FERNAN.
 PHONOGRAPH HORN.
 APPLICATION FILED JAN. 15, 1906.

Fig. 1,

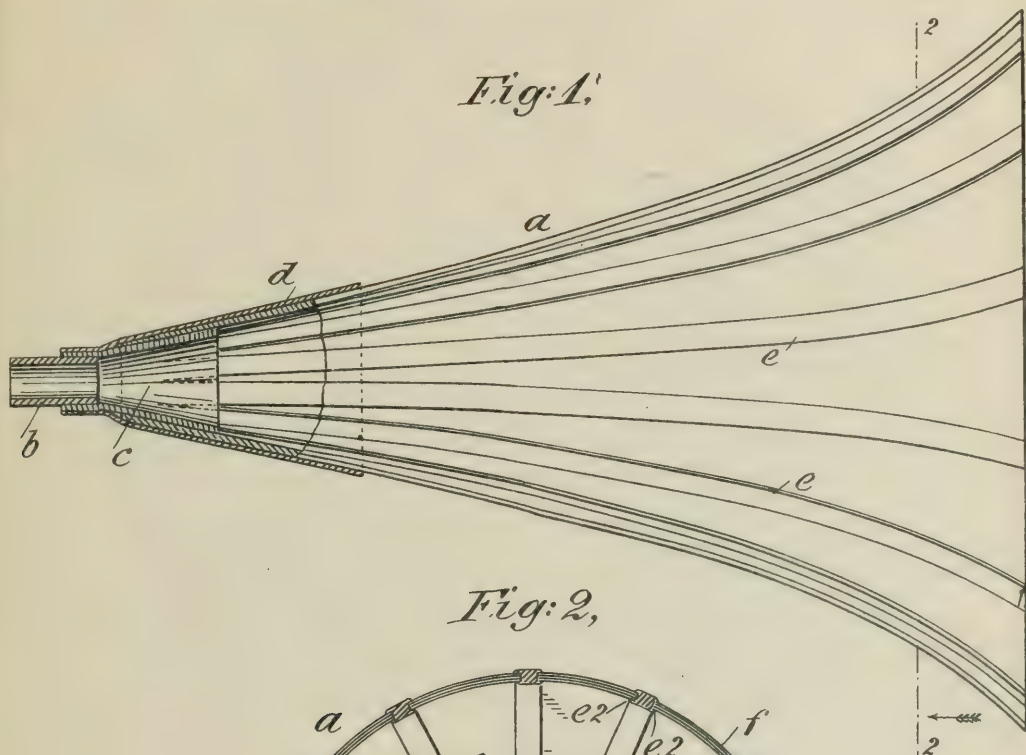
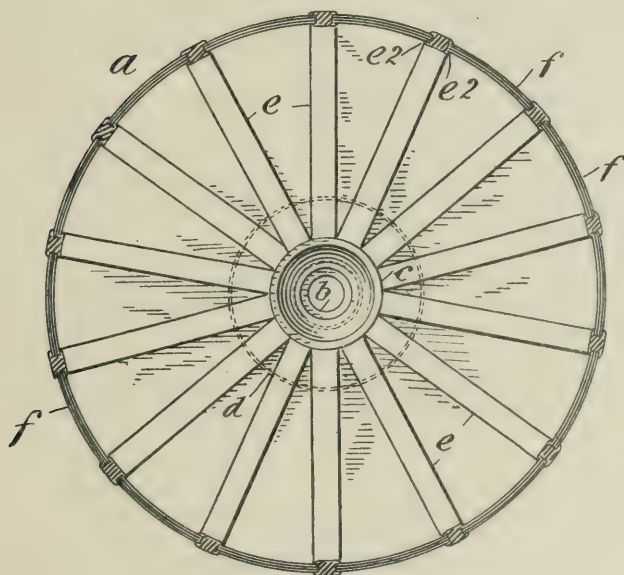


Fig. 2,



WITNESSES

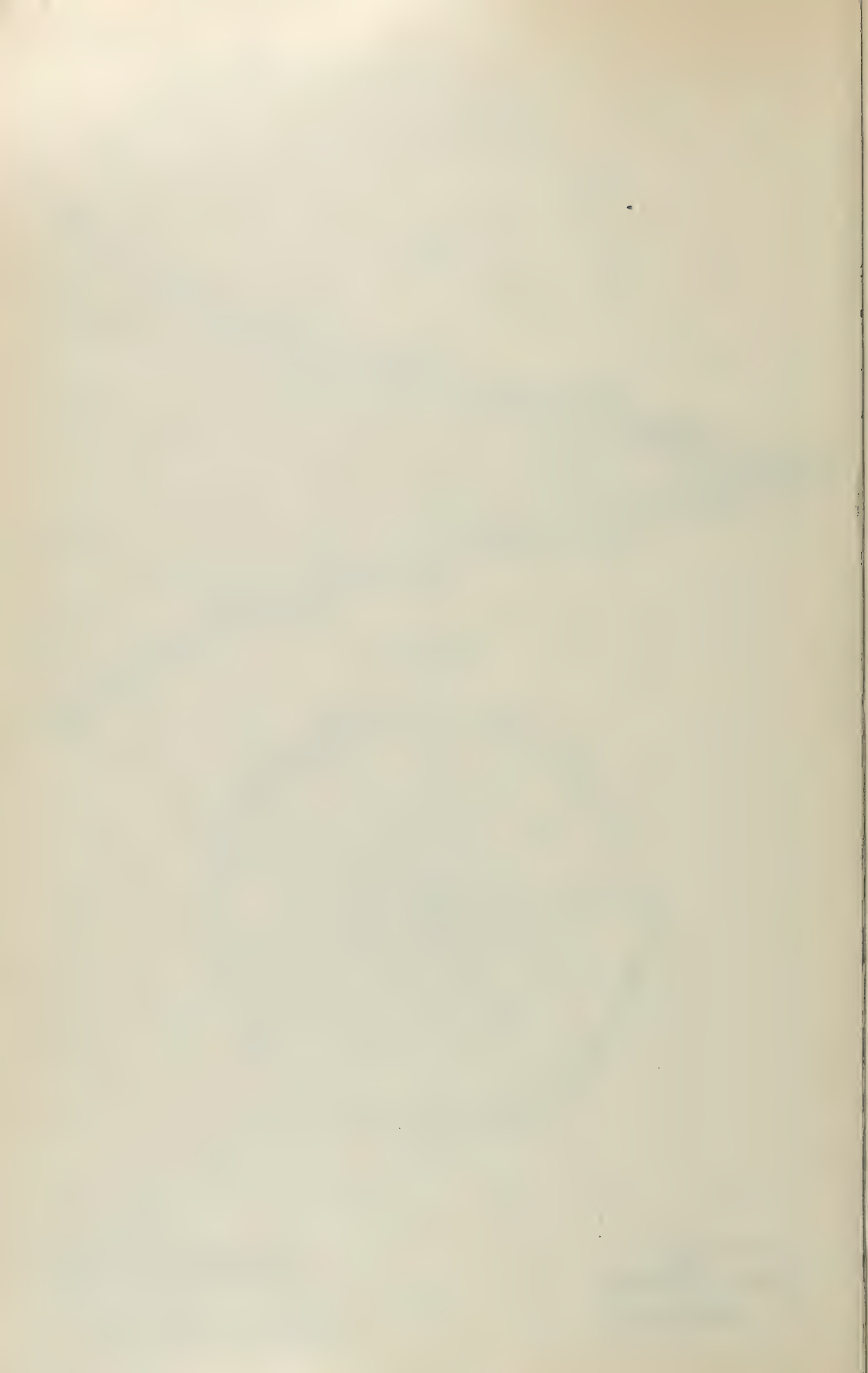
Ernest Hageng.
 J. A. Stewart

INVENTOR

BY HIS

Walter S. Fernan

Edgar Sales & Co
 ATTORNEYS



UNITED STATES PATENT OFFICE.

WALTER S. FERNAN, OF NEW YORK, N. Y.

PHONOGRAPH-HORN.

No. 829,066.

Specification of Letters Patent.

Patented Aug. 21, 1906.

Application filed January 15, 1906. Serial No. 296,076.

To all whom it may concern:

Be it known that I, WALTER S. FERNAN, a citizen of the United States, residing at New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Phonograph-Horns, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to the delivery-horns of phonographs and other machines of this class; and the object thereof is to provide a delivery-horn for machines of the class specified which will do away with the mechanical, harsh, and metallic sounds usually produced in the operation of such machines and also produce a full, even, and continuous volume of sound in which the articulation is clear, full, and distinct, a further object being to provide a horn of the class specified which is made entirely of wood or other fibrous material; and with these and other objects in view the invention consists in a horn of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a side view, partly in section, of my improved delivery-horn for phonographs and similar machines, and Fig. 2 a transverse section of the horn on the line 2 2 of Fig. 1.

In the practice of my invention I provide a delivery-horn *a* for phonographs and other talking-machines or music-reproducing machines provided at its smaller end with the usual nozzle-piece *b*, by means of which connection is made with the machine in the usual manner, and in the form of construction shown a supplemental horn-piece *c* is employed between the body portion of the horn and the nozzle-piece *b* and in which the nozzle-piece *b* is secured, the supplemental piece serving as means for connecting the body portion of the horn with the nozzle-piece, and the smaller end of the horn is also provided with a shield or covering *d*, which extends, in the form of construction shown, from the smaller end of the piece *c* a predetermined

distance along the smaller end of the horn and serves as a reinforcement therefor.

The body portion of the horn is composed of a plurality of longitudinal ribs *e*, separated by tapering spaces which gradually widen from the smaller end to the larger end of the horn, and these spaces are filled in with web members *f*, composed of a plurality of layers of wood or other fibrous material secured together, and the edges of the said web members fit in grooves *e*², formed in the opposite sides of the rib members *e*. In the form of construction shown the web members *f* are composed of three separate layers of material; but it will be apparent that other numbers of layers of material may be employed, and the said layers of material are in practice, if more than one layer be employed, secured together before the said web members are secured in place between the ribs *e*.

All the parts of my improved horn, including the nozzle-piece *b*, the short tube member *c*, and the shield or covering *d*, are composed of wood or other fibrous material, and my invention is not limited to the use of the part *c*; but I prefer to use said part, as it forms a reinforcement and strengthening device for the smaller end of the horn.

A horn made in this manner will not produce the harsh metallic and other objectionable sounds usually produced by the delivery-horns of instruments or machines of the class specified, and changes in and modifications of the construction described may be made without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A delivery horn for phonographs and similar machines, the body portion of which is composed of longitudinal ribs having oppositely-disposed side grooves, and tapering webs secured in said grooves, substantially as shown and described.

2. A delivery-horn for phonographs and similar machines, the body portion of which is composed of longitudinal ribs having oppositely-disposed side grooves, and tapering webs secured in said grooves, said webs being composed of separate layers of material, substantially as shown and described.

3. A delivery-horn for phonographs and similar machines, the body portion of which is composed of longitudinal ribs having oppositely-disposed side grooves, and tapering webs secured in said grooves, said ribs and said webs being composed of fibrous material, substantially as shown and described.

In testimony that I claim the foregoing as

my invention I have signed my name, in presence of the subscribing witnesses, this 13th day of January, 1906.

WALTER S. FERNAN.

Witnesses:

F. A. STEWART.

C. E. MULREANY

It is hereby certified that the name of the patentee in Letters Patent No. 829,066, granted August 21, 1906, for an improvement in "Phonograph-Horns," was erroneously written and printed "Walter S. Fernan," whereas said name should have been written and printed *Walter S. Fernau*; and that the said Letter's Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office

Signed and sealed this 25th day of February, A. D., 1908.

[SÉAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.

[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Specifications and Drawings in Letters-Patent No. 829,066. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

G. BENJAMIN & W. HANDLEY.

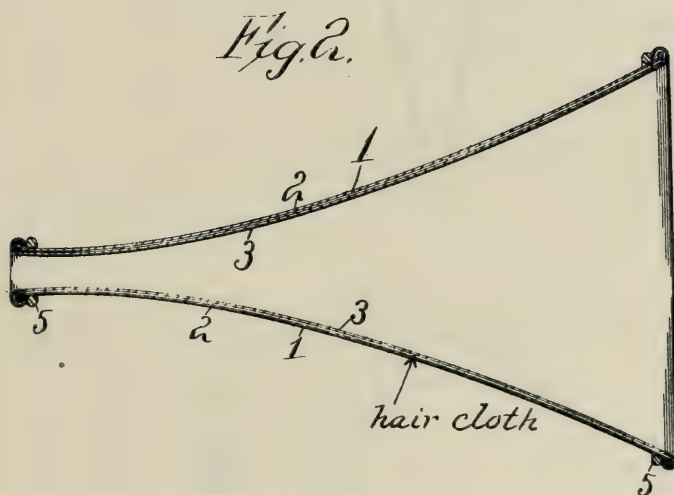
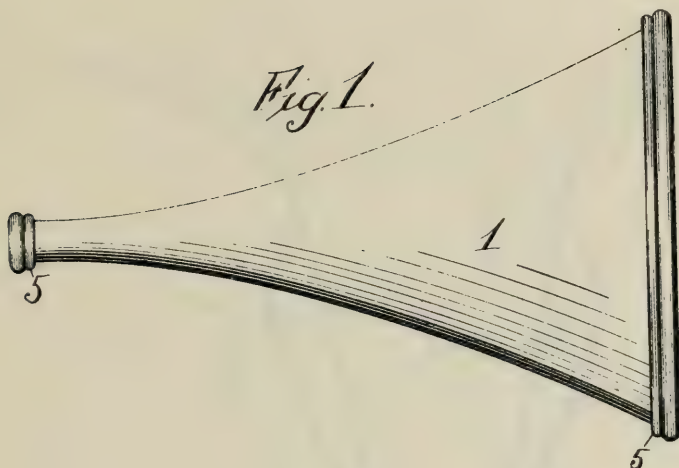
PHONOGRAPH HORN.

APPLICATION FILED AUG. 22, 1908.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1.

917,404.



Attest.
R. H. Stoddard

George Benjamin Inventors:-
Wm. Handley

G. BENJAMIN & W. HANDLEY.

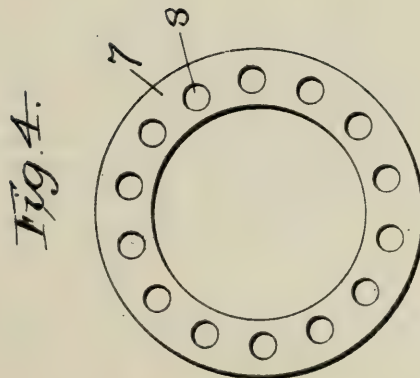
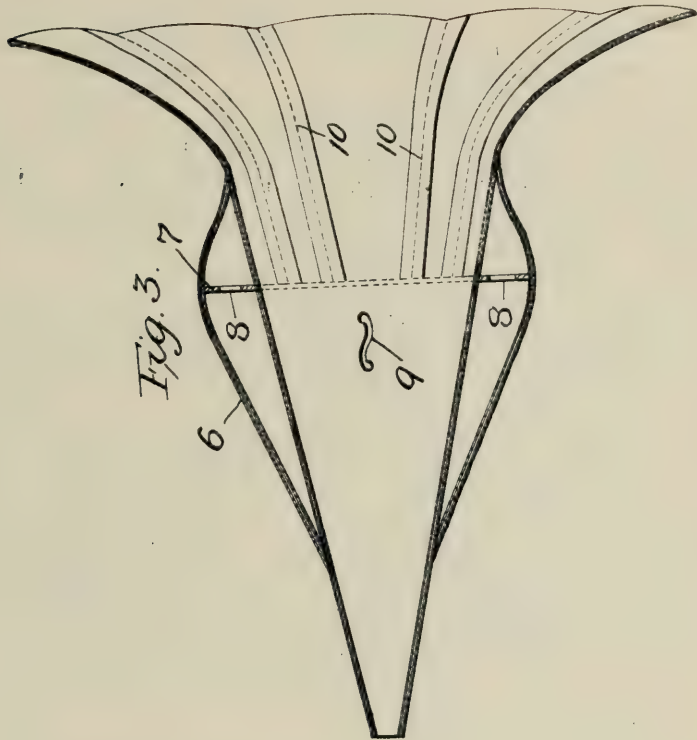
PHONOGRAPH HORN.

APPLICATION FILED AUG. 22, 1908.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 2.

917,404.



Attest.
Bentley & Stahl
[Signature]

Inventor
George Benjamin
William Handley
by Spear Middleton, Donnellson & Ott



GEORGE BENJAMIN, OF PHILADELPHIA, PENNSYLVANIA, AND WILLIAM HANDLEY, OF
CAMDEN, NEW JERSEY.

PHONOGRAPH-HORN.

No. 917,404.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed August 22, 1908. Serial No. 449,808.

To all whom it may concern:

Be it known that we, GEORGE BENJAMIN and WILLIAM HANDLEY, citizens of the United States, residing at Philadelphia, Pennsylvania, and Camden, New Jersey, respectively, have invented certain new and useful Improvements in Phonograph-Horns, of which the following is a specification.

Our invention relates to the production of a horn for use in graphophones or phonographs and is designed especially to overcome the serious objection of the metallic sound common to many horns; to provide a horn very light in weight and at the same time very durable.

In the accompanying drawing is shown in Figure 1 a side view, and in Fig. 2 a sectional view of a horn made in accordance with our invention. Fig. 3 represents a sectional view of a horn having a sound box. Fig. 4 is a detail view of the bridge.

We have found that it is exceedingly difficult to produce a horn which will not interfere in any way with the sound produced by the machine and we have aimed to avoid the metallic or screeching sound common to metallic horns and to also prevent the absorption or flattening of the sound as when any form of wood is used and in our experiments we have discovered that the use of horse hair produces the most perfect tones, provided it is arranged with the strands of horse hair longitudinally of the horn.

In carrying out our invention we utilize an outer lining for the horn, which may be paper as shown at 1, or this may be of silk to give a finish to the exterior of the horn, or we may use silk over the paper, but in all cases the paper is thin for the sake of lightness. Next to the paper or silk exterior, we place the horse hair layer, the strands of the horse hair extending longitudinally of the horn and then in order to protect the horse hair from abrasion we place over it a layer of thin paper, muslin or silk so that while protection may be given to the horse hair layer, the benefit derived from the horse hair or horse hair cloth will not be lost. The end of the horn may be stiffened by a metallic rim as shown at 5. The hair cloth layer is indicated at 2 and the inner layer of paper, silk or muslin at 3. We have found that the hair cloth lining or layer is non-absorbent and does not tend to flatten the sounds, but has a tendency to carry them and to deliver them as they issue from the machine in per-

fect tones. We believe that strands made of animal substances, such as cat-gut, would answer precisely the same purpose, but it would be too expensive to be used and hence we find in the hair cloth a material perfectly answering the purpose and having the merit of economy, as well.

We also provide a sound box in connection with the horn formed as described to increase the volume and purity of tone, this consisting, as shown in Fig. 3 of an outer wall 6 made up of the layers of paper and horse hair, or hair cloth, this wall being laid over a bridge 7, the inner edge of which rests upon the wall of the horn proper. This bridge is preferably of annular form having openings at 8. In front of this bridge and toward the small end of the horn we provide openings 9 through the wall of the horn through which the interior of the sound box or chamber communicates with the interior of the horn for the emission of the sound. These openings are preferably of S shape, similar to those employed adjacent the bridge in a violin, and in fact our sound box produces, in a measure, a violin effect in softening the tones and increasing the volume thereof, the horse hair strings being laid over the bridge and being vibrated by the sound waves to give the desired effect. We do not limit ourselves to the form of bridge or shape of the sound box.

We prefer to build up our horn of a series of tapered strips of material the general form of which is shown in Fig. 3 between the dotted lines 10. The strips of paper and of horse hair cloth are each of this form, *i. e.* tapered to conform to the flare of the horn, and when superimposed they are held together by uniting strips of paper or other material pasted or cemented over the joints of the tapered layers as indicated at 11.

It will be understood that the inner and outer layers are separated from each other by the interposed hair cloth, and the interstices of this hair cloth are free, that is to say, the hair cloth is not embedded in any body or holding material.

What we claim is:—

1. A graphophone horn composed of a plurality of separate layers of material, including a layer of hair cloth, said hair cloth having its interstices free, substantially as described.

2. A graphophone horn composed of a plurality of layers of material, including an

outer bounding layer, an inner layer and an interposed layer of hair cloth, said layers of material being separate, and the hair cloth having its interstices free, substantially as described.

3. A graphophone horn composed of layers of material, including a layer of hair cloth laid against the other layer and having its interstices free, the strands of hair running longitudinally or lengthwise of the horn, substantially as described.

4. A graphophone horn having a chamber surrounding the main wall of the horn, with an opening leading into the interior of the horn and closed throughout its outer wall, substantially as described.

5. A phonograph horn having a bridge surrounding its main wall and a chamber surrounding the main wall of the horn, with its outer wall extending over the bridge, substantially as described.

6. A phonograph horn having a chamber surrounding its main wall and with a bridge

therein surrounding the said main wall, with hair cloth extending over the bridge and forming a part of the outer wall, substantially as described.

7. A phonograph horn having a chamber extending around its main wall, said main wall and the outer wall of said chamber each having a layer of hair cloth therein, and an interposed bridge, substantially as described.

8. A phonograph horn composed of inner and outer layers of material separated by a layer of hair cloth.

9. A phonograph horn composed of inner and outer layers of material separated by a layer of hair cloth in which the strands of hair cloth run lengthwise of the horn.

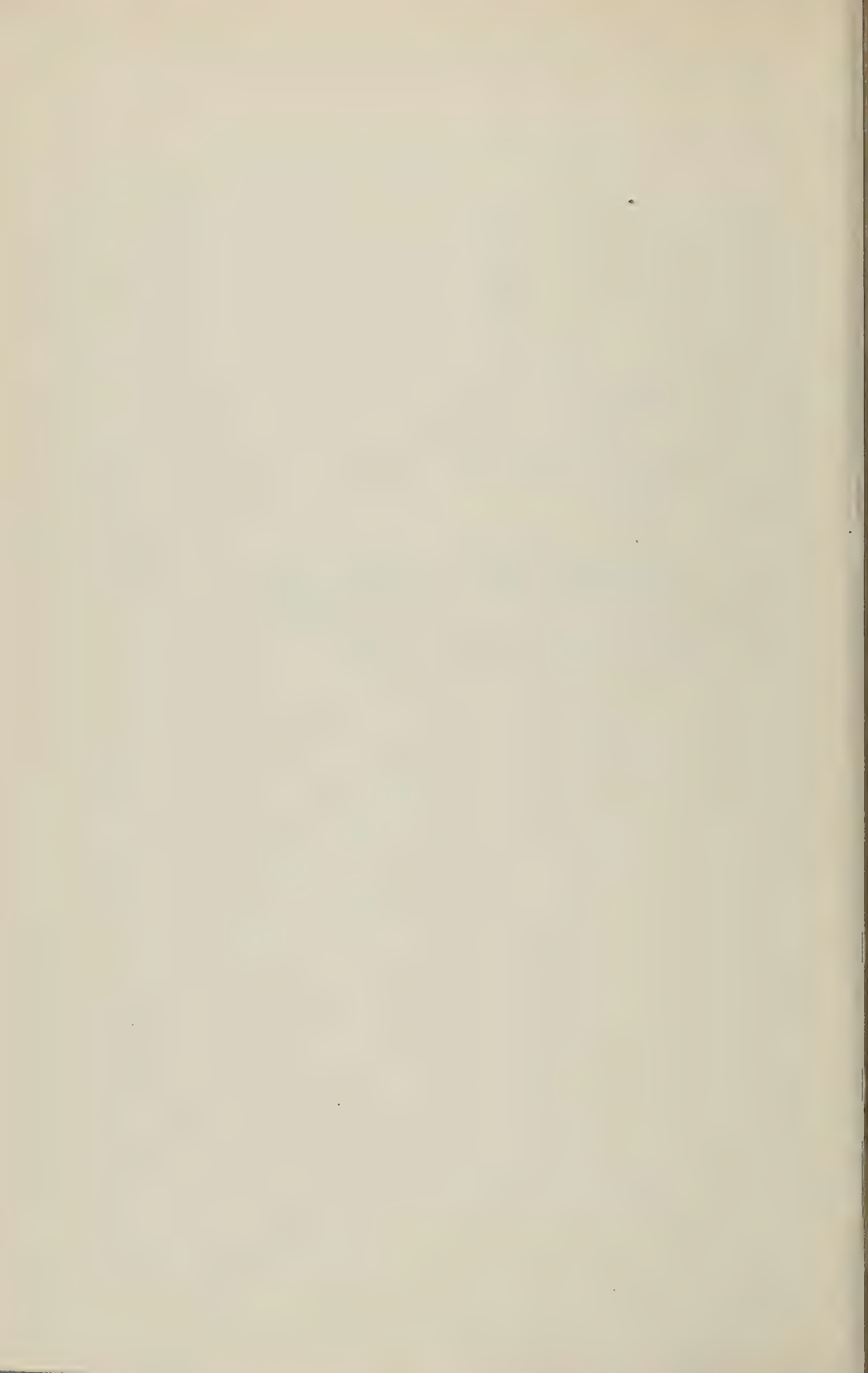
In testimony whereof, we affix our signatures in presence of two witnesses.

GEORGE BENJAMIN.
WILLIAM HANDLEY.

Witnesses:

JAMES R. ANDERSON,
LOUIS D. CASNER.

[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit 48. Filed Apr. 8, 1916. F. D. Monckton, Clerk.



J. A. DANIS.
METAL HORN.

APPLICATION FILED JAN. 14, 1910:

967,618.

Patented Aug. 16, 1910.

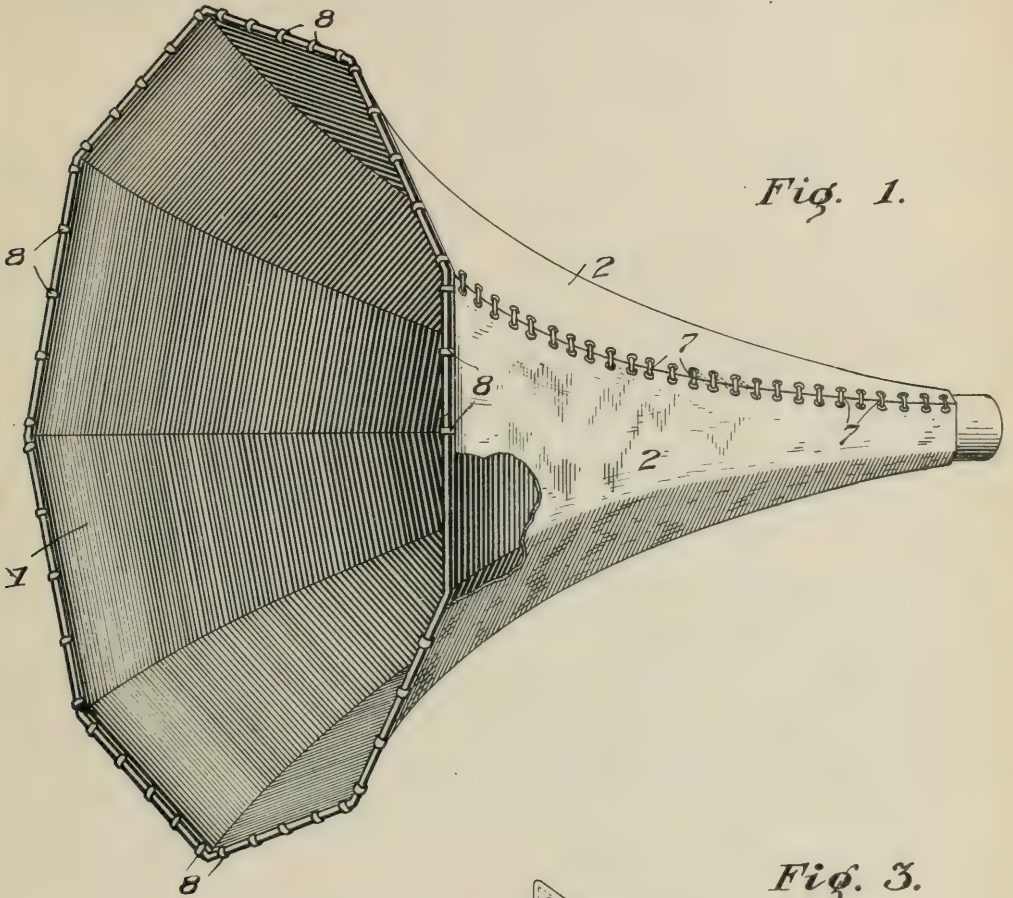


Fig. 1.

Fig. 2.

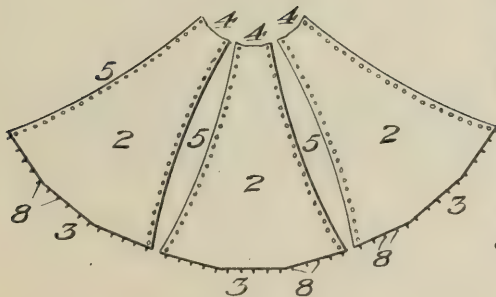
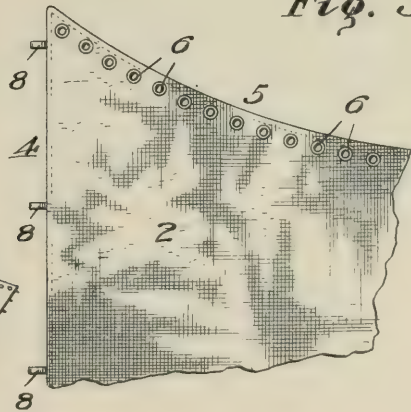


Fig. 3.



Witnesses:

Edward Danis
Alphonse C. Demio

Inventor:



UNITED STATES PATENT OFFICE.

JOSEPH ADELOR DANIS, OF BURLINGTON, VERMONT.

METAL HORN.

967,618.

Specification of Letters Patent.

Patented Aug. 16, 1910.

Application filed January 14, 1910. Serial No. 538,168.

To all whom it may concern:

Be it known that I, JOSEPH ADELOR DANIS, a citizen of the United States, residing at the city of Burlington, in the county of Chittenden and State of Vermont, have invented a new and useful Improvement in Metal Horns, of which the following is a specification.

This invention relates to horns or amplifiers for phonographic apparatus, and its object is to provide means for dampening the vibrations of said horn when made of metal, so that the tone of the instrument will be sweeter and smoother. The means which I use to accomplish this result comprises a cover for the horn made of textile fabric and detachably secured to said horn. To insure a good fit, the cover is made in sections, provided with means for lacing them together, and at its larger end said cover is also provided with hooks which catch over the edge of the metal horn and hold the cover tightly stretched, and in close contact with said horn.

In the accompanying drawing, Figure 1 is a perspective view of a metal horn or amplifier provided with my improved cover. Fig. 2 shows the sections from which the cover is made, and Fig. 3 is a view on a larger scale of one corner of a section showing the eyelets and hooks with which it is provided.

The horn 1 is made of metal in the customary bell-mouthed or flaring shape. The cover is composed of a plurality of sections 2 cut out of textile material. The combined

length of the larger ends 3 of said sections is just sufficient to encircle the mouth of the horn, while the combined lengths of the smaller ends 4 of said sections will just go around the small end of said horn. The edges 5 of the sections are concaved so that the cover will snugly hug the horn throughout its entire length. Along said curved edges the sections are provided with eyelets 6 to receive the lacings 7 by which the sections are held together. When the completed cover is drawn over the horn, the hooks 8 along the large ends of the sections are pulled over the edges of the mouth of the horn, where they are retained by the elasticity of the textile fabric of which the cover is made, so that it will fit closely and smoothly all over the outer surface of the horn. It can be readily removed by disengaging the hooks and slipping it off over the small end of the horn, after removing the latter from the talking machine.

Claim:

The combination with the metal horn of a talking machine, of a detachable cover of textile material, composed of sections shaped to fit said horn snugly and laced together along their edges, and hooks at the larger end of said cover adapted to be engaged with the edge of the mouth of said horn and retained there by the elasticity of the material.

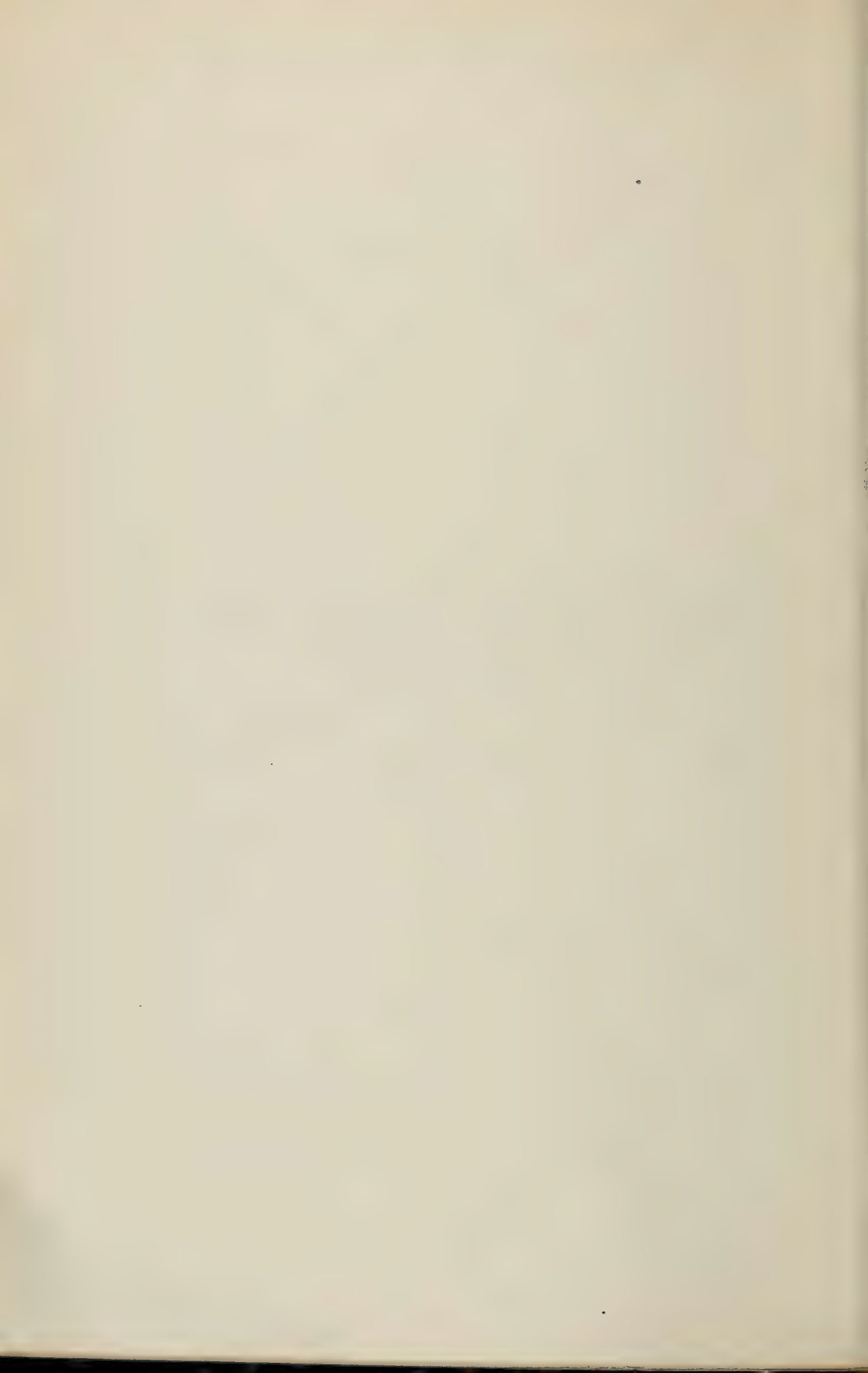
JOSEPH ADELOR DANIS.

Witnesses:

EDWARD DENNIS,
ARTHUR DENNIS.



[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit 46. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

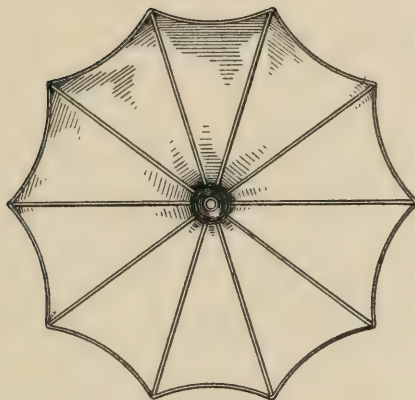
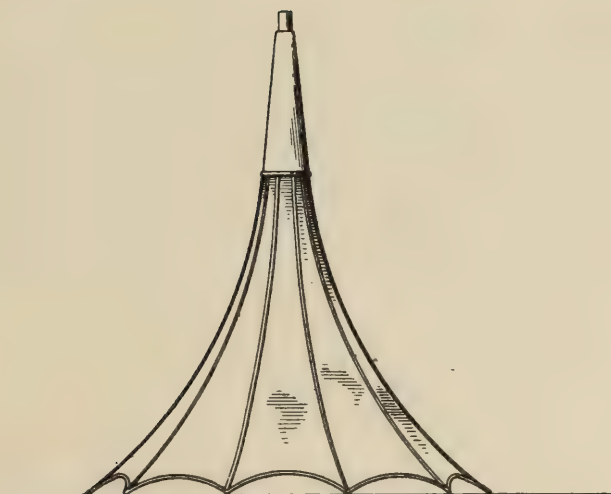


DESIGN.

No. 38,202.

PATENTED AUG. 28, 1906.

C. J. EICHHORN.
 AMPLIFYING HORN.
 APPLICATION FILED JUNE 29, 1905.

*Fig. 1.**Fig. 2.*

WITNESSES:

Ralph Lancaster

Russell M. Everett

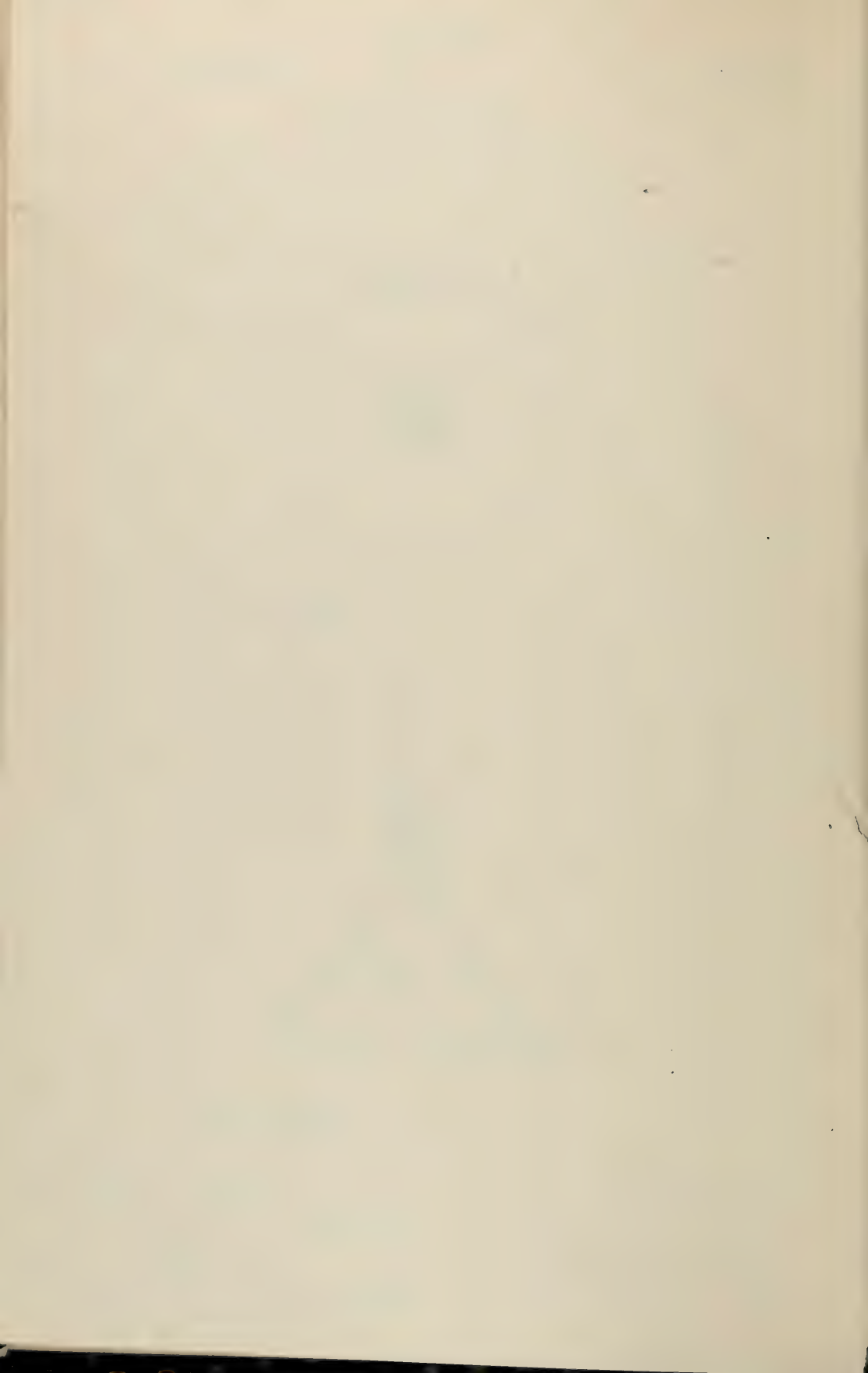
INVENTOR:

Charles J. Eichhorn,

BY

Charles H. Bell,

ATTORNEY.



UNITED STATES PATENT OFFICE.

CHARLES J. EICHHORN, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE
TEA TRAY COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION
OF NEW JERSEY.

DESIGN FOR AN AMPLIFYING-HORN.

No. 38,202.

Specification for Design.

Patented Aug. 28, 1906.

Application filed June 29, 1905. Serial No. 267,667. Term of patent 14 years.

To all whom it may concern:

Be it known that I, CHARLES J. EICHHORN, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a new, original, and ornamental Design for Amplifying-Horns, as shown in the accompanying drawings.

In the accompanying drawings, Figure 1 shows in front elevation or large end view an

amplifying-horn of my new and ornamental design, and Fig. 2 is a side elevation of the same.

I claim—

The ornamental design for an amplifying-horn, as shown.

CHARLES J. EICHHORN.

Witnesses:

CHARLES H. PELL,
CLEMENT BEECROFT.



[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit #41. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

DESIGN.

No. 38,273.

PATENTED OCT. 9, 1906.

C. BEECROFT.
HORN.

APPLICATION FILED MAR. 10, 1906.

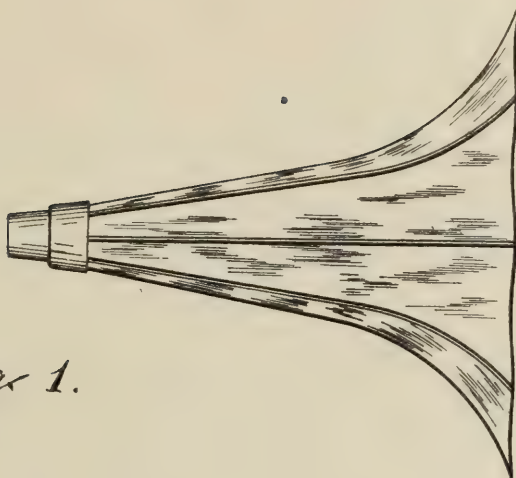


Fig. 1.

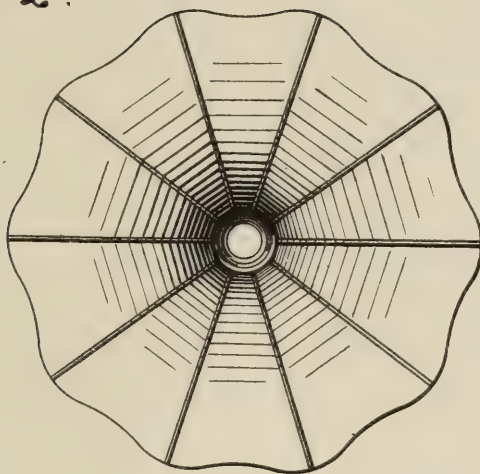


Fig. 2.

WITNESSES

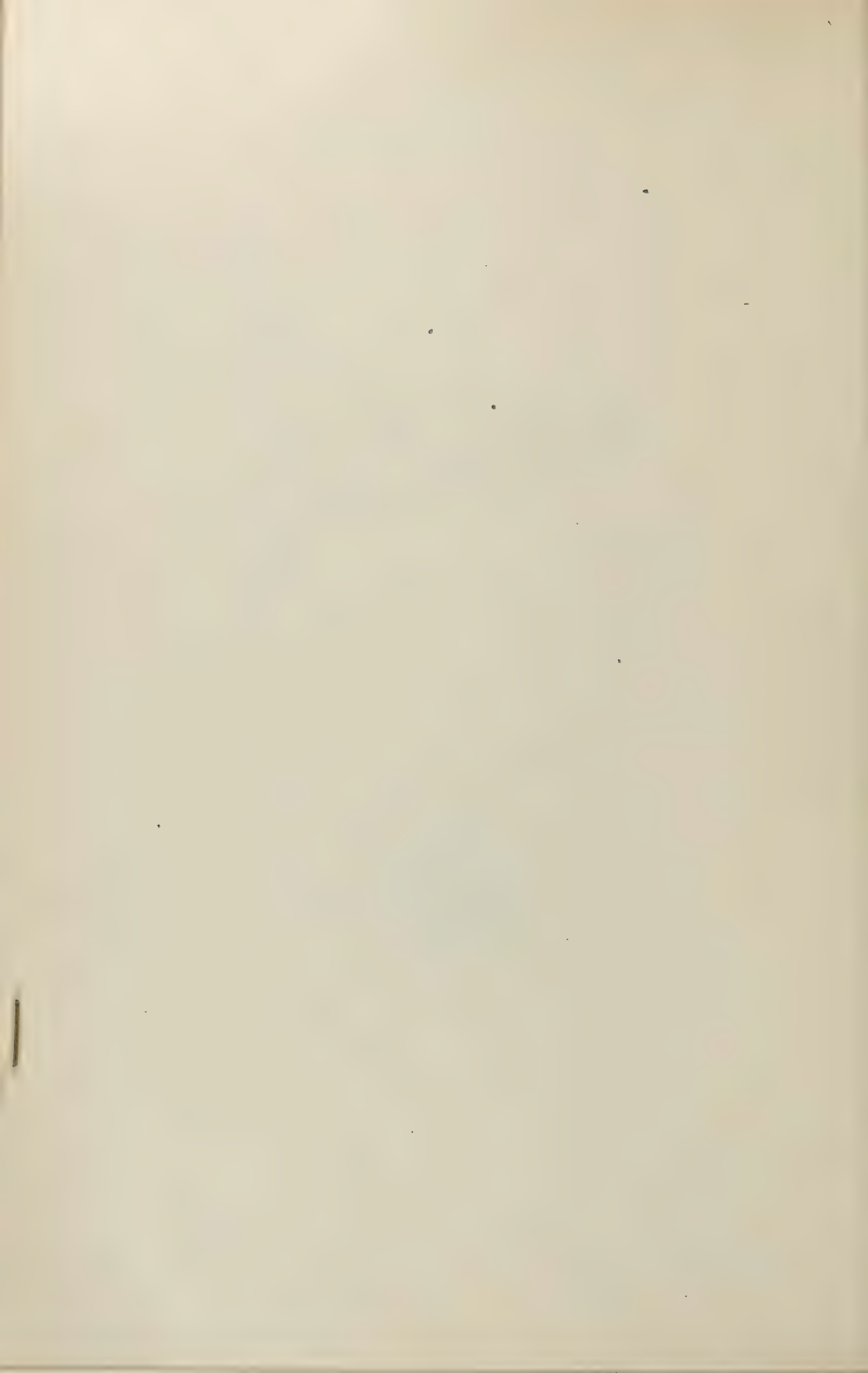
Ethel B. Reed
F. O. Christiansen.

INVENTOR

Clement Beecroft,

BY

Russell M. Everett,
ATTY.



UNITED STATES PATENT OFFICE.

CLEMENT BEECROFT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE TEA TRAY COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION
OF NEW JERSEY.

DESIGN FOR A HORN.

No. 38,273.

Specification for Design.

Patented Oct. 9, 1906.

Application filed March 10, 1906. Serial No. 305,411. Term of patent 14 years.

To all whom it may concern:

Be it known that I, CLEMENT BEECROFT, a citizen of the United States, residing in the city of Philadelphia, and State of Pennsylvania, have invented a new, original, and ornamental Design for a Horn, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

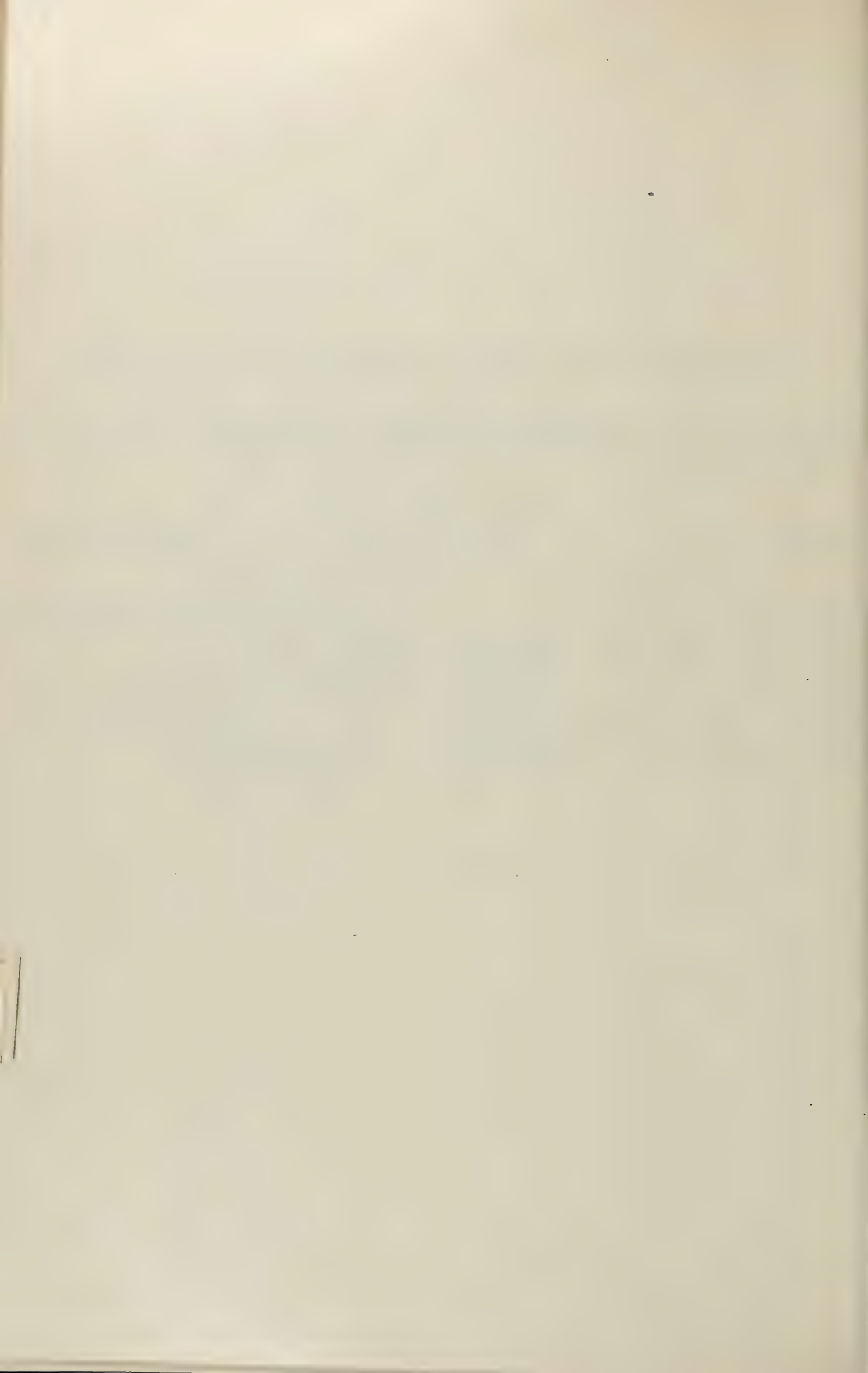
Figure 1 is a side elevation of a horn, showing my new design; and Fig. 2 is view of the large end of the same.

I claim—

The ornamental design for a horn as shown.
CLEMENT BEECROFT.

Witnesses:

RUSSELL M. EVERETT,
ETHEL B. REED.



[Endorsed]: No. 2759. U. S. Circuit Court of
Appeals for the Ninth Circuit. Exhibit No. 42.
Apr. 8, 1916. F. D. Monckton, Clerk.

DESIGN.

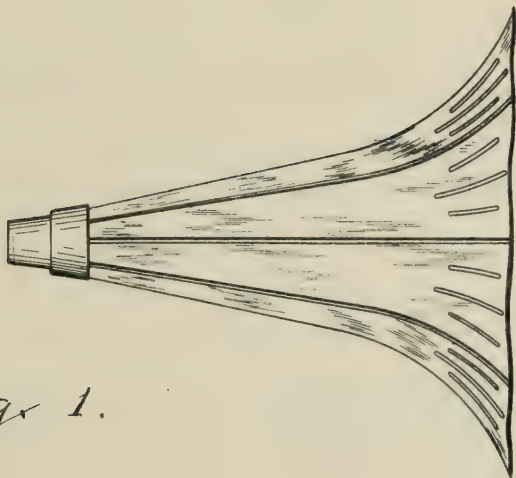
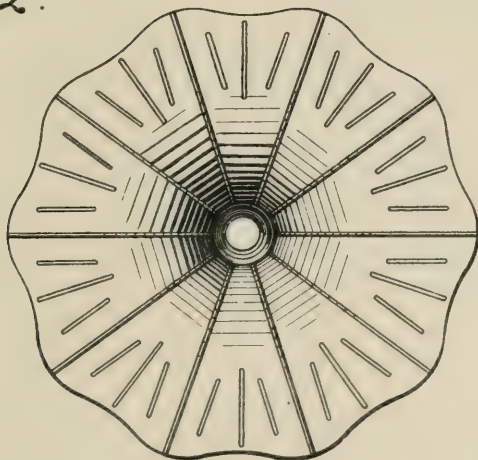
No. 38,274.

PATENTED OCT. 9, 1906.

C. BEECROFT.

HORN.

APPLICATION FILED MAR. 10, 1906.

*Fig. 1.**Fig. 2.*

WITNESSES

*Ethel A. Reed**F. B. Christiansen*

INVENTOR

Clement Beecroft,
BY*Russell M. Everett.*

UNITED STATES PATENT OFFICE.

CLEMENT BEECROFT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE TEA TRAY COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION
OF NEW JERSEY.

DESIGN FOR A HORN.

No. 38,274.

Specification for Design.

Patented Oct. 9 1906.

Application filed March 10, 1906. Serial No. 305,412. Term of patent 14 years.

To all whom it may concern:

Be it known that I, CLEMENT BEECROFT, a citizen of the United States, residing in the city of Philadelphia and State of Pennsylvania, have invented a new, original, and ornamental Design for Horns, of which the following is a specification, reference being had to the accompanying drawings, forming part thereof.

Figure 1 is a side elevation of a horn, showing my new design; and Fig. 2 is view of the large end of the same.

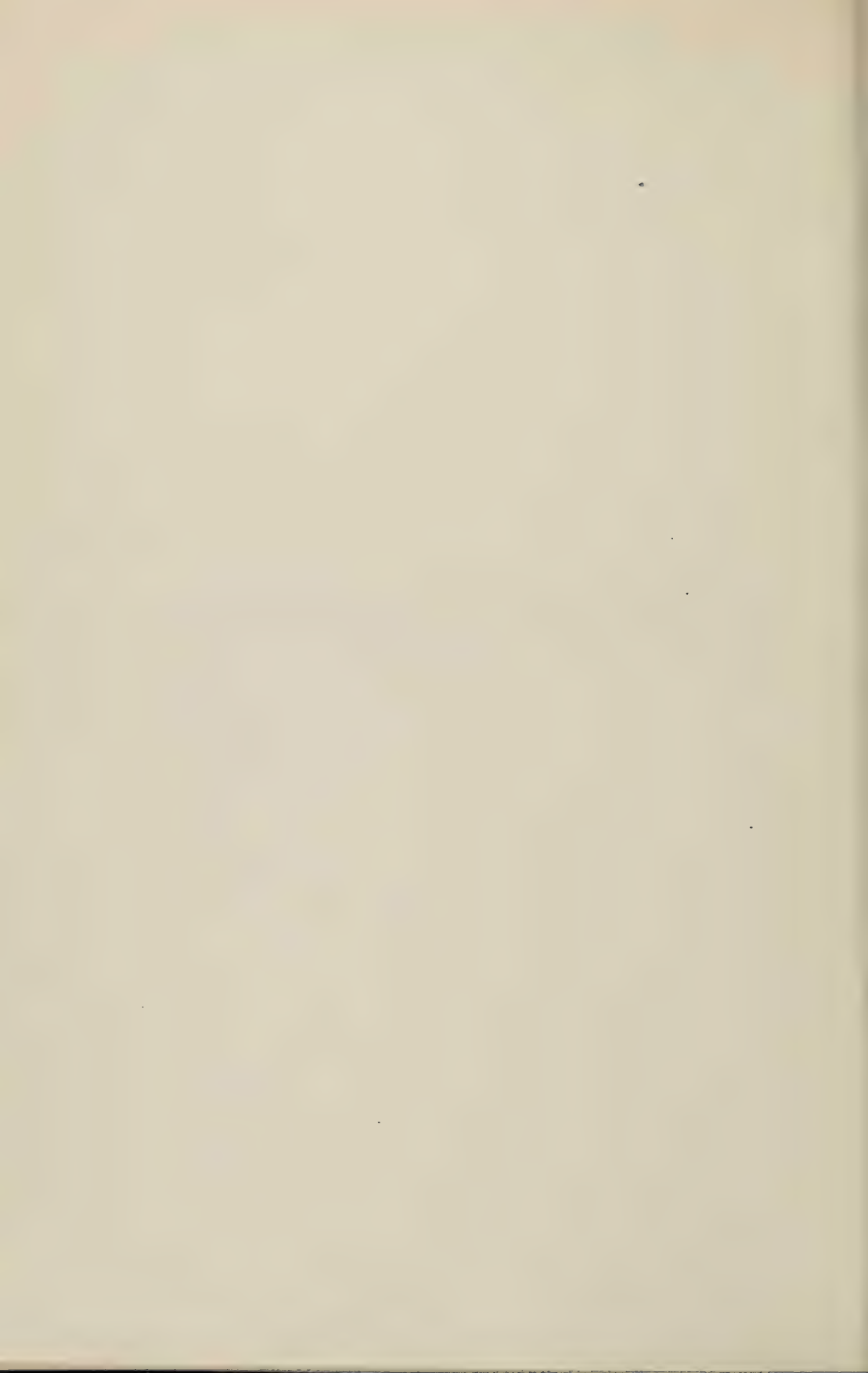
I claim—

The ornamental design for a horn as shown.
CLEMENT BEECROFT.

Witnesses:

RUSSELL M. EVERETT,
ETHEL B. REED.

[Endorsed]: No. 2759. U. S. Circuit Court of
Appeals for the Ninth Circuit. Exhibit #43. Filed
———. F. D. Monckton, Clerk.



DESIGN.

No. 38,602.

PATENTED JUNE 4, 1907.

M. STEINER.
PHONOGRAPH HORN.
APPLICATION FILED MAY 6, 1907

Fig. 1

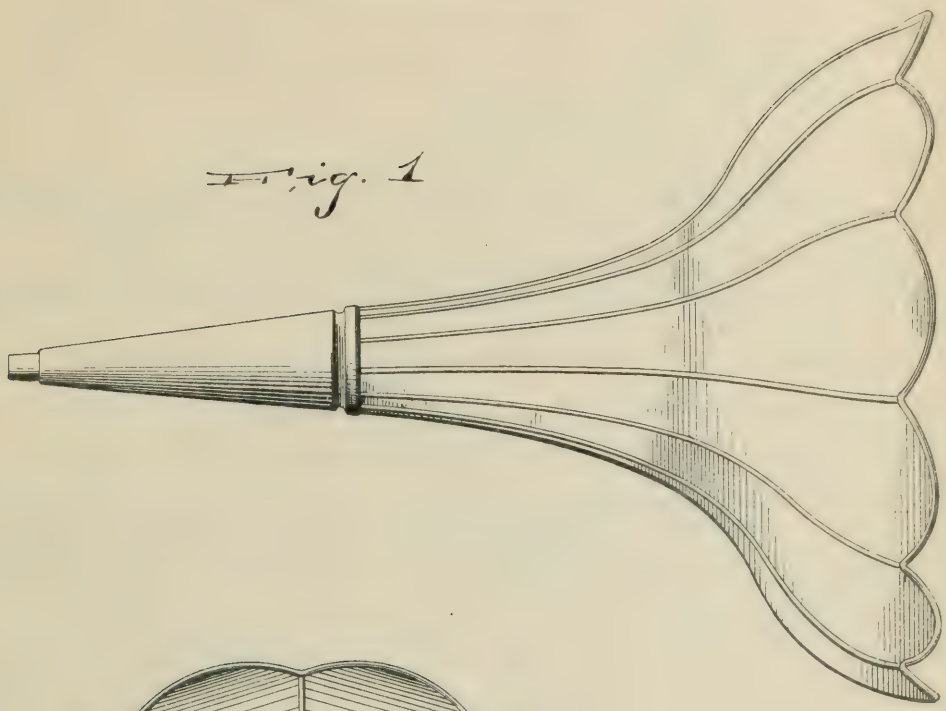


Fig. 2



WITNESSES:

Henry Kahn
Ralph Lancaster

INVENTOR

Max Steiner
BY
Wm. H. Campfield
ATTORNEY

UNITED STATES PATENT OFFICE.

MAX STEINER, OF NEWARK, NEW JERSEY, ASSIGNOR TO THE NEW JERSEY SHEET METAL CO., OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

DESIGN FOR A PHONOGRAPH-HORN.

No. 38,602.

Specification for Design.

Patented June 4, 1907.

Application filed May 6, 1907. Serial No. 372,290. Term of patent 7 years.

To all whom it may concern:

Be it known that I, MAX STEINER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a new, original, and ornamental Design for Phonograph-Horns, of which the following is a specification, reference being had to the accompanying drawing, forming part thereof.

Figure 1 is a side view, and Fig. 2 is an end view looking from the large end.

What I claim is:—

The ornamental design for a phonograph horn, as shown.

MAX STEINER.

Witnesses:

WM. H. CAMFIELD,
E. A. PELL.

[Endorsed]: No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Exhibit #45. Filed Apr. 8, 1916. F. D. Monekton, Clerk.

Impr'd Bell

PATENTED

DEC 17 1867

72422

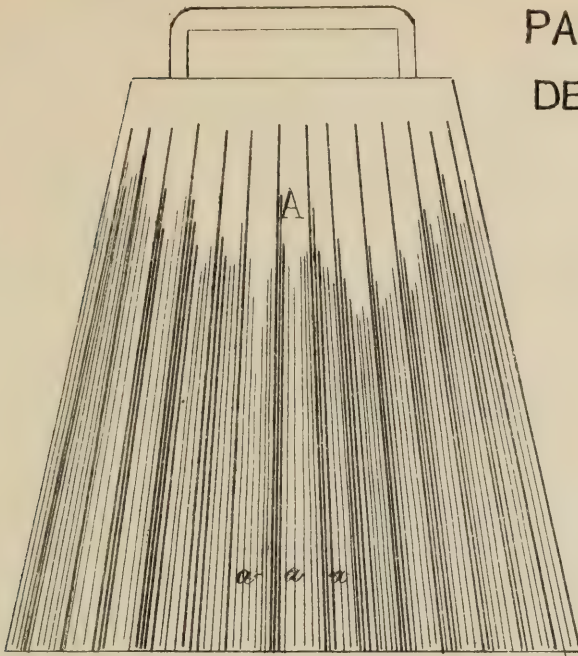


Figure 1.

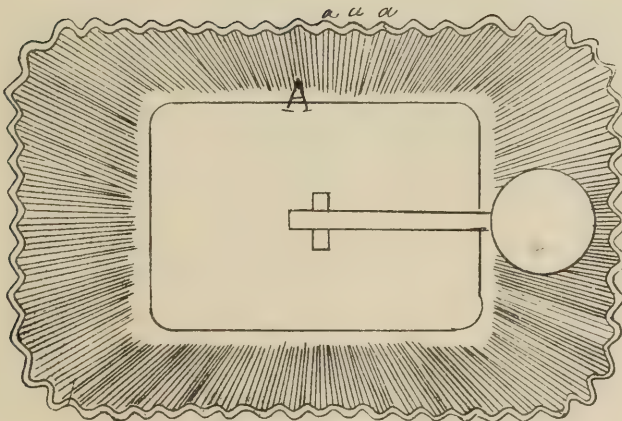


Figure 2.

Witnesses

E. C. WhiteJ. B. des Granges

Inventor.

G. S. Saxton

By his Atty.

United States Patent Office.

GEORGE S. SAXTON, OF ST. LOUIS, MISSOURI.

Letters Patent No. 72,422, dated December 17, 1867.

IMPROVEMENT IN MANUFACTURE OF CORRUGATED BELLS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE S. SAXTON, of the city and county of St. Louis, and State of Missouri, have invented a new and useful Improvement in Bells; and I do hereby declare that the following is a full and clear description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention relates to an improvement in bells by corrugating the lower portion of their sides or bodies; the object of which improvement is twofold in its nature: Firstly, it is for the purpose of increasing the tintinnabulary quality of the bell, and the volume of the sound issued therefrom; and, secondly, it is for the purpose of constructing small bells of sheet metal, and of one single piece, the corrugations of the sides of the bell taking up the excess of the metal toward the base, and thus rendering it possible to form a perfect pressed bell of one single piece.

To enable those skilled in the art to make and use my improved bell, I will proceed to describe its construction and operation.

Figure 1 of the drawings is a side elevation of one of the improved bells.

Figure 2 is a bottom plan of the same.

The general form of the bell A may be in any pattern that is best adapted to the purposes for which it is intended. The only feature in which it differs from all other bells is in the corrugations *a*, which commence in large folds near or at the bottom of the bell, and, as they rise, gradually diminish toward the top, at which place they entirely vanish. These folds or corrugations *a* increase the lower or vibratory portion of the bell to such an extent as to very perceptibly increase the volume of sound produced by its agitation. The chief object of the improvement, however, is to form the bell in such a manner that it may be constructed by pressing, with suitable dies, a single sheet of metal into the proper form. This of course is confined to small bells, and the result is to produce a better bell at a cheaper price. The depth of the bell of course precludes the idea of pressing a bell into the proper form without taking up the excess of metal in this manner.

Having described my invention, I claim as a new article of manufacture—

The bell A, when it is formed in corrugations, substantially in the manner and for the purpose set forth.

GEO. S. SAXTON.

Witnesses:

M. RANDOLPH,

T. E. WHITE.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit "A." Oct. 2, '12. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "A." Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "A." Filed Apr. 8, 1916. F. D. Monckton, Clerk.

No. 165,912.

Patented July 27, 1875.

FIG. I.

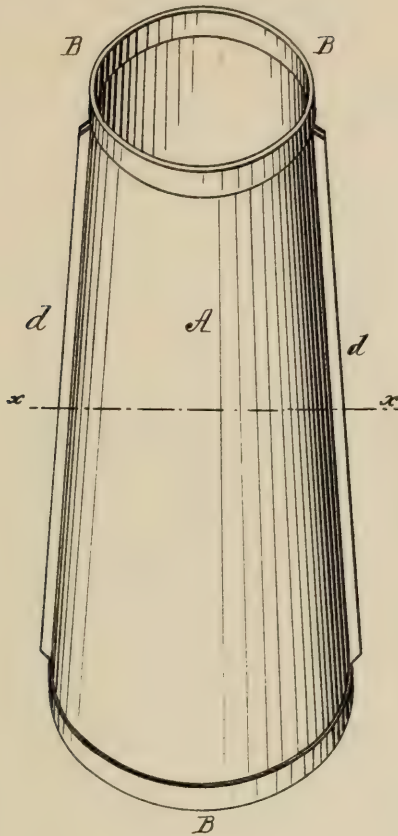


FIG. III.

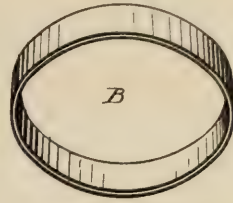


FIG. II.

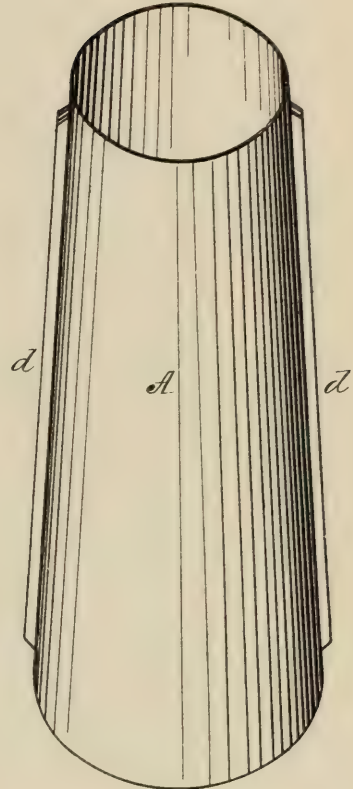


FIG. V.

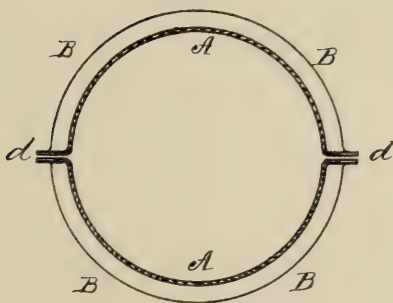
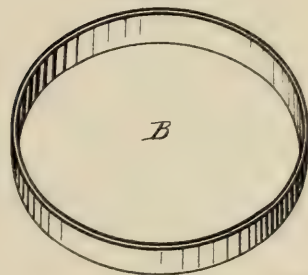


FIG. IV.



WITNESSES:

J. S. Coombs
W. H. Norris

INVENTOR

William H. Barnard

By James L. Norris

Atty

UNITED STATES PATENT OFFICE.

WILLIAM H. BARNARD, OF SEDALIA, MISSOURI.

IMPROVEMENT IN LAMP-CHIMNEYS.

Specification forming part of Letters Patent No. **165,912**, dated July 27, 1875; application filed January 4, 1875.

To all whom it may concern:

Be it known that I, WILLIAM H. BARNARD, of Sedalia, in the county of Pettis and State of Missouri, have invented certain new and useful Improvements in Lamp-Chimneys, of which the following is a specification:

My invention relates to certain improvements in that class of lamp-chimneys which are constructed of two longitudinal sections, united at their edges, and properly bound or clasped together, for the purpose of allowing for the expansion and contraction of the glass when subjected to sudden changes of temperature, and preventing the chimney from cracking or breaking.

The object of my invention is to secure a more perfect joint at the point of union of the two sections, and provide a more secure and reliable device for binding the two sections together, than has been heretofore accomplished in the chimneys of this class, as ordinarily constructed; and my invention consists in constructing a chimney of two longitudinal sections or parts, as usual, each section having a longitudinal flange on its edges, which unite and form a longitudinal projection or edge on the outside of the chimney when the sections are bound together.

By this construction a broad face is obtained along the edges of each section, which form, when properly ground and placed together, a perfect joint.

In the drawings, Figure 1 is a perspective view of my improved lamp-chimney; Fig. 2, a similar view of the same with the end ferrules removed. Figs. 3 and 4 are detached views of the top and bottom ferrules, respectively; and Fig. 5 is a section on line *xx* of Fig. 1.

The letters A A represent the sections composing the chimney. Along the edges of each section, on the outside, a longitudinal flange, *d*, is formed. The faces of these flanges

are accurately ground, so as to form a perfectly tight joint when the sections are joined together. The flanges do not extend quite to the end of the sections, but terminate a short distance from said ends, in order to allow the sections to set into the annular ferrules which bind them together. These annular ferrules are represented by the letters B B. They are constructed so as to grasp the edges of the sections at their ends, both on the inside and outside, and thus firmly bind them together.

It will be seen that by the above-described construction of the sections a broad face will be formed along the edges of the sections at the point of union, which will allow said edges to be readily and accurately ground, forming a perfect joint throughout the entire length of the sections, which it has hitherto been found impossible to obtain.

The annular ferrules, by grasping both the outside and inside of the chimney, will prevent any slipping of the sections, and thus necessarily bind them in place.

The chimneys thus constructed are admirably adapted for packing for transportation, as the sections will nest together, occupying but little room.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A lamp-chimney constructed of two sections, each of which is provided with laterally-projecting flanges, substantially as described, whereby, when the sections are placed together, a longitudinal projection is formed and a perfect joint secured, as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal.

WILLIAM H. BARNARD. [L. S.]

Witnesses:

J. HALL BROWNE,

J. S. JACKSON.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit "E." Oct. 2, '12. M., Deputy Clerk.

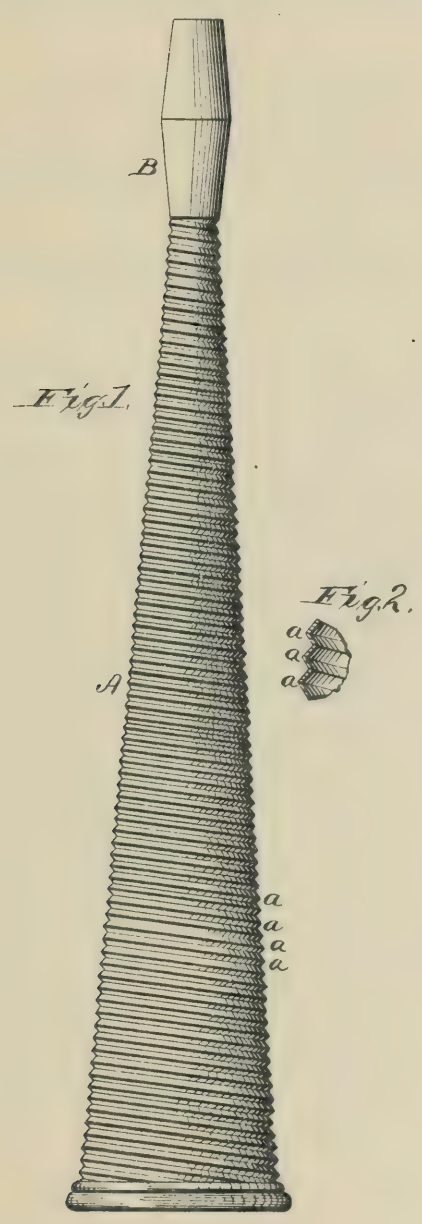
No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "E." Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "E." Filed Apr. 8, 1916. F. D. Monckton, Clerk.

C. W. FALLOWS.
TOY BLOW HORN.

No. 181,159.

Patented Aug. 15, 1876.



WITNESSES
Frank L. Ostrand
C. L. Cook

INVENTOR
Chas W. Fallows
By *Alfred Mason*
Attorneys

UNITED STATES PATENT OFFICE.

CHARLES W. FALLOWS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN TOY BLOW-HORNS.

Specification forming part of Letters Patent No. **181,159**, dated August 15, 1876; application filed June 27, 1876.

To all whom it may concern:

Be it known that I, CHARLES W. FALLOWS, of Philadelphia, in the county of Philadelphia, and in the State of Pennsylvania, have invented certain new and useful Improvements in Sheet-Metal Blow-Horns; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in the construction of a blow-horn, as hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to manufacture and use the same, I will now proceed to more fully describe the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a side elevation of my blow-horn, and Fig. 2 represents a small section of the body.

The body A of the horn is made of corrugated sheet metal, in the usual tapering form, and is provided with a mouth-piece, B, having the usual reed. The metal which forms the body is cut in proper shape, and then passed between rollers or dies and crimped or corrugated. These corrugations are preferably

made on an incline, so that when the blank sheet is bent into tubular shape the corrugations *a a* will be on a short spiral, as shown in the drawings.

It is well known that the thinner the metal of which such horns are made the sharper the tone; but in cases where the horns are plain or smooth, and made of light metal, they do not have the requisite strength or keep proper shape, and in a short period would not be merchantable or present a neat appearance.

I claim for my invention that lighter and cheaper metal can be used, and that the same is more easily worked into proper shape by being light, that it costs less in construction, and that the sound made by the mouth-piece and reed is sharper than in the usual blow-horn made of plain or smooth metal.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A blow-horn made of corrugated sheet metal, for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of June, 1876.

CHARLES W. FALLOWS.

Witnesses:

JAMES FALLOWS,

ANSON EATON.

[Endorsed]: District Court of the United States, in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Fallows Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914, W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Fallows Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.

(No Model.)

C. R. PENFIELD.

METALLIC BARREL.

No. 362,107.

Patented May 3, 1887.

Fig. 1.

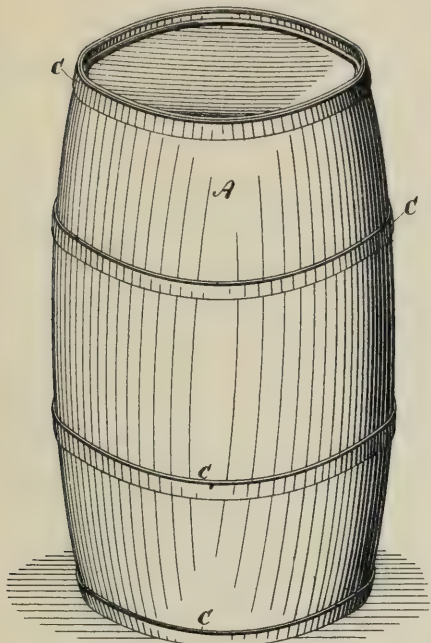


Fig. 2.

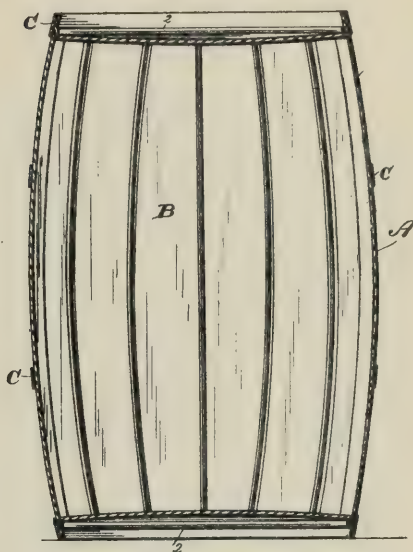


Fig. 13.

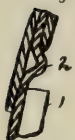


Fig. 3.

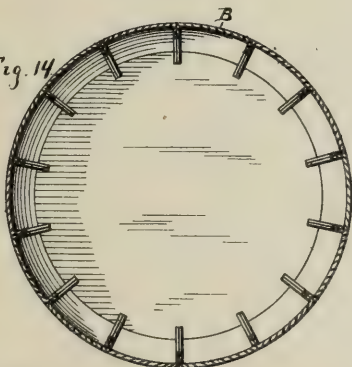


Fig. 14.

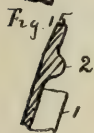


Fig. 11.

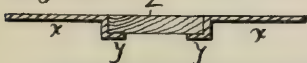


Fig. 12.

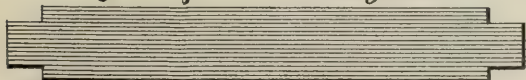


Fig. 4.

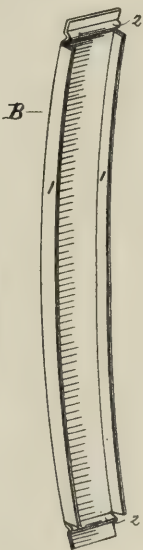


Fig. 5.



Fig. 6.



Fig. 7.

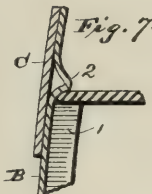


Fig. 8.

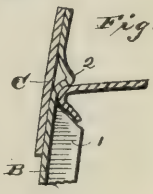


Fig. 9.

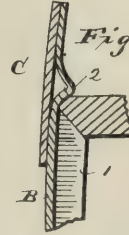
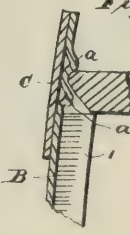


Fig. 10.



Witnesses.

Chas. R. Burr.

Asst. Secy.

Inventor.

Charles R. Penfield
by Chas. & Chas.
his Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES R. PENFIELD, OF ROCHESTER, NEW YORK.

METALLIC BARREL.

SPECIFICATION forming part of Letters Patent No. 362,107, dated May 3, 1887.

Application filed September 2, 1886. Serial No. 212,510. (No model.)

Whom it may concern:

It known that I, CHARLES R. PENFIELD, of Rochester, in the county of Monroe and of New York, have invented certain new and useful Improvements in Metallic Barrels; and I do hereby declare the following to be a clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, to the figures and letters of reference indicated thereon.

My invention has for its object to provide a strong and storing barrel constructed of metal that shall resemble in appearance the ordinary wooden barrel, but shall be much stronger, lighter, and altogether more desirable, whether used as a receptacle for liquids or a dry or "slack" barrel; and it consists in a barrel constructed of metallic staves fashioned somewhat after the manner of wooden staves and fastened together, preferably, by hoops, or which may be soldered, or hooped and galvanized, if desired; and it further consists in certain novelties of construction and combinations of parts, which will be hereinafter fully described, and pointed out in the claims at the end of this specification.

In the drawings, Figure 1 is a view of a barrel constructed in accordance with my invention; Fig. 2, a longitudinal and Fig. 3 a cross section of the same. Fig. 4 is a perspective view of one of the staves; Figs. 5 and 6, views of the joints between the edges of the staves; Figs. 7, 8, 9, 10, and 11, views of modifications of the croze and means of fastening the heads of the staves; and Fig. 12 a view of the stave-blank. Figs. 13, 14, and 15 are views exhibiting various means of strengthening the chine.

Similar letters of reference in the several figures indicate the same parts.

Figure 1 represents a barrel constructed in accordance with my invention, resembling, as far as its external appearance is concerned, an ordinary wooden barrel, constructed of the staves B, fastened together by means of hoops C, as is usually done.

The staves B are made from a blank of sheet metal, preferably steel, such as shown in Fig. 4, the side flanges, 1 1, being forced by the pressure of the rollers into the shape shown in Fig. 5. That is, they are bent transversely to give

the requisite amount of bilge, and then are given a slight longitudinal bending, so as to strengthen them sufficiently, and also to give the barrel which they are to form the proper 55 rotundity. At the same or another operation the side flanges, 1 1, are bent up to nearly right angles with the body of the staves. Corrugations or ribs 2 2 are next formed near the ends of the blank, a short distance beyond the 60 ends of the side flanges, and this space between the corrugations and the ends of the flanges forms the croze, as will be further on explained. These bending operations, though 65 described *seriatim*, are, it will be understood, to be performed by one operation by some powerful pressing device—such, for instance, as a hydraulic press—suitable dies of course being employed to accomplish the purpose. The stave thus constructed, it will be seen, is 70 very stout, and by reason of the several arches and projecting flanges is able to stand any amount of hard usage without losing its shape.

Now, in order to form a barrel from the above staves it is only necessary to set them 75 up with the flanges 2 2 in contact with those of the next stave, and then to place the hoops on and drive them to their proper positions, after the manner of making ordinary wooden barrels. 80

As the flanges at the side of the staves have a broad bearing upon each other, they are effectually prevented from slipping by, and will therefore act in the same manner as ordinary 85 wood staves. If desired, instead of having the flanges come close together, as shown, they may be bent slightly either inward or outward, as shown in Figs. 5 and 6—in the latter case to give elasticity to the barrel or to permit of 90 applying some sealing material to the cracks thus formed, or in the former case to permit of sealing or galvanizing on the inside and permitting the galvanizing material to fill the crevice formed therein.

The manner of forming the croze and attaching the head may be varied in many ways, 95 as may also the construction of the head. For instance, a plain metal head without flanges (such as shown in Fig. 7) might be employed, in this case the edge of the metal disk being 100 confined between the corrugation and the ends of the flanges 1 1, the ordinary hoop being ap-

plied to the outside of the staves, pressing them inward and strengthening the chine, as shown; or, if desired, a concavo convex head might be employed having a flange around it, as shown in Fig. 8, adapted to be confined in a manner similar to the device shown in Fig. 7, but having the projecting flange turned down.

In Fig. 9 I have shown the tops of the flanges on the staves inclined, forming the under side of the croze inclined and a wooden head applied thereto, and this device may be used in connection with a head composed partly of wood and partly of metal, *x x*, the two side pieces of metal being provided with flanges *y y*, projecting beneath the wooden piece *z*, as shown in Fig. 11, and they may be provided with upwardly or downwardly projecting flanges adapted to fit the croze.

In Fig. 10 I have shown a double corrugation or two ribs, *a a*, on the end of the stave, the groove between them constituting the croze, and this construction I regard as a particularly good one, because it relieves the ends of the longitudinal flanges *l l* of all pressure upon them.

Barrels constructed as above may be used for liquids, in which event I propose to line them with some form of cement in order to make a tight joint between the staves, or to galvanize them, so as to render them non corrosive, and also to fill the insides of the seams with the galvanizing material; or I also propose to use them for dry substances, in which case the barrel can be formed, in the usual manner, without the use of cement or galvanizing material, the hoops being rolled upon to fasten the whole together, and when thus used one of the flanges *l* may, if desired, be dispensed with, a tight joint being made by one flange with the plain edge of the next stave.

The barrel as a whole is much stronger and lighter than the wooden barrels ordinarily in use, and is practically indestructible. The staves individually are much stronger by reason of the bracing and arching, and, further more, it can be used as a "knockdown" barrel when used for dry or semi liquid materials, the spring in the metal flanges serving to preserve a practically tight joint between the staves. There are no seams or corrugations on the outside of the barrel, and nothing to prevent its being rolled and manipulated after the manner of ordinary barrels.

The chine may be strengthened by a band of metal extending around the inside, if desired,

as shown in Fig. 13, or by employing an end hoop with an internally-projecting flange, as in Fig. 14, and the end of the staves may, if desired, be strengthened by forming a solid rib in lieu of the corrugation *l l* for forming the croze, as in Fig. 15.

Various modifications will at once suggest themselves to those skilled in the art, and therefore I do not desire to be confined to the exact construction herein shown.

I claim as new—

1. The herein-described barrel, consisting of the metallic staves having the corrugations at their ends and the flanges at the sides, and the hoop or hoops for securing them together, substantially as described.

2. The herein-described barrel, consisting of the metallic staves curved so as to form the bilge, having the corrugations at their ends and the flanges at the sides, and the hoops for securing them together, substantially as described.

3. The herein described barrel-stave, constructed of sheet metal bent transversely so as to form the bilge, and having the inwardly-turned flange at the side and the corrugations or ribs at the ends, substantially as described.

4. The herein-described barrel-stave, constructed of sheet metal bent transversely so as to form the bilge, and having the inwardly-turned flanges on both sides thereof, and the corrugations or ribs at the ends, substantially as described.

5. The herein described barrel-stave, constructed of sheet metal bent transversely so as to form the bilge, having the flanges at the sides and the corrugations at the ends forming a portion of the croze, substantially as described.

6. The herein described barrel-stave, constructed of sheet metal, having the flanges at the sides, terminating a short distance from the ends, and the corrugations at the ends, cooperating with the ends of the flanges to form the croze, substantially as described.

7. The herein-described barrel, constructed of sheet-metal staves, bilged as shown, having the flanges at the sides, the corrugations at the ends, forming with the ends of the flanges the croze, the sheet metal heads, and the hoops for securing the whole together, substantially as described.

CHARLES R. PENFIELD.

Witnesses

DE L. CRITTENDEN.

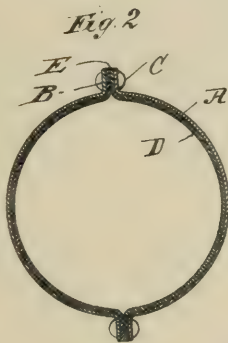
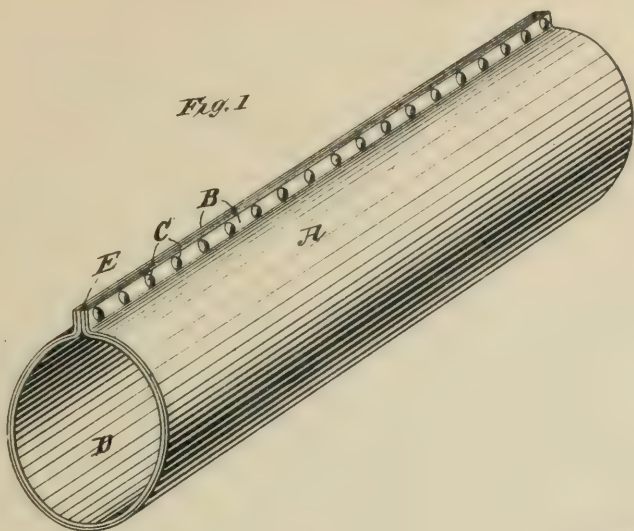
W. D. ARMATALE

(No Model.)

J. C. BAYLES.
PIPE OR TUBE.

Patented July 2, 1889.

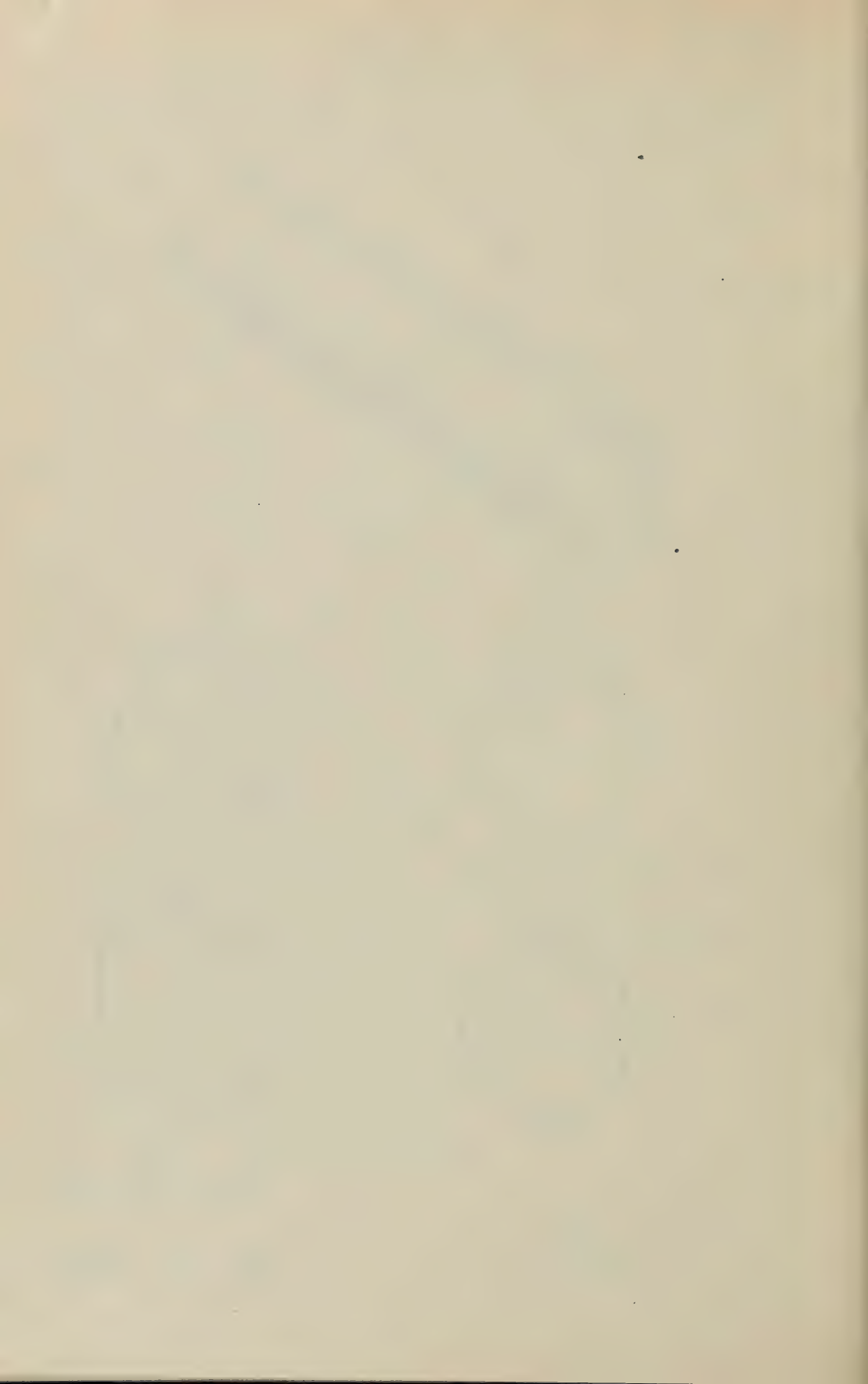
No. 406,332.



Witnesses:

Raphael Netter
Robt. F. Gaylord

Jas. C. Bayles *Inventor*
by
Duncan Curtis & Pay



UNITED STATES PATENT OFFICE.

JAMES C. BAYLES, OF NEW YORK, N. Y.

PIPE OR TUBE.

SPECIFICATION forming part of Letters Patent No. 406,332, dated July 2, 1839.

Application filed April 6, 1889. Serial No. 306,167. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. BAYLES, of the city, county, and State of New York, have invented certain new and useful Improvements in Pipes or Tubes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The present invention relates to the construction of pipes or tubes, and especially to that class of pipes that are adapted to conducting acidulous or other iron-destroying liquids. Thus in mining and similar operations it is found that much of the water that it is necessary to drain or draw off is more or less impregnated with sulphur or other elements that render it corrosive in its action upon metal pipes which usually are made of iron.

Heretofore it has been customary to a limited extent to use pipes made of wood or similarly non-corrosive material; but this kind of pipe is obviously impracticable in various respects. It is difficult to make, as well as expensive, especially in large sizes and in regions where there is little timber. It is cumbersome to handle and does not well serve where a water-tight pipe is needed.

It is therefore the object of the invention to produce a metal pipe which shall be capable of resisting the action of the iron-destroying fluids; and the invention consists of a pipe made up from sheet-iron and provided with a lining or sheathing of lead.

Referring to the drawings, Figure 1 shows a section of pipe embodying the invention and having but one seam. Figs. 2 to 5 are cross-sections of modified forms.

Referring to these views in detail, A represents the exterior or body part of the pipe. This body is composed of sheet-metal blanks, which is brought into cylindrical form by any suitable means, with outwardly-projecting flanges B along its longitudinal edges. These flanges are brought opposite each other and then secured together by the rivets C, or any other suitable form of connection—that is to say, bolts or screws may be used, or even any form of suitable clamp—and in the case of very thin metal the flanges may be made to clasp each other or lock together.

the entire inner surface of the metal body A. This lead lining will usually be of a thin gage, and before the seam parts of the iron body of the pipe are closed finally together the sheet of lead will be inserted in such body and worked down to conform to substantially the same form—that is, so as to lie closely on the inner surface of the sheet-iron. Of course the sheet-lead may be shaped with the body of the pipe when this is practicable, and still other ways of placing the lining within the body of the pipe and conforming it thereto will occur to those familiar with the art of pipe-making. This lead sheathing is to be flanged similarly to the blank of the body part, and the flanges E thus formed are to be brought together face to face and secured to and between the flanges B of the iron body. Thus the seam of the pipe as a whole consists of four thicknesses and forms a rib or wing extending outwardly from the surface of the pipe, which serves to stiffen and strengthen the pipe and exposes the junctional parts of the seam for easy manipulation in case of repair of leaks or ruptures.

It is essential in the construction of this pipe that the interior sheathing be secured between the flanges of the iron body. Not only is a tight seam readily formed, but the lining is held against collapsing or being forced away from the surface of the iron. Thus, as is well understood, the lead lining under the action of heat will expand and stretch, but it will not when subsequently cooled contract and return to its previous form, and the effects of long-continued expansion and contraction of the iron body of the pipe will tend to corrugate the lining and to force it away from contact with the inner face of the pipe, as well as to rupture it or cause it to collapse; but when the lining is attached to the body of the pipe the distortion of the lead lining is practically obviated, for the lining will be held against moving away from the iron. Where pipe of but a single seam is used, the pipe should be laid with the seam uppermost, so that the lining will be positively held up by the iron body, and not alone by virtue of the strength of its own arch, for then the action of contraction and expansion, which would be most exerted in the arch, will have

Fig. 2 shows a form of pipe having two seams, but in other respects it is the same as the pipe of Fig. 1. Fig. 3 is another similar form of pipe composed of three sections and having three seams.

It is expected that the most available form of pipe would be one having two or more seams, as the sections of such a pipe may be most conveniently bunched and shipped from the factory to the place of use, where the sections may be secured together in pipe form. So, too, with such pipe, the separate sections are so nearly flat that it is a simple matter to apply the lead linings to them, which may very readily be done at the time of assembling them into pipe form. The lead in thin sheets would have but to be laid in the sections and could be quickly shaped thereto by mallets or other simple hand-tools, and in case the run of water does not fill the pipe, or does so rarely, then only the lower or underneath section or sections need be lined.

In Fig. 4 I show the seams provided with re-enforce pieces F, which are angle-bars lying in the angles of the seams, and are employed where a strong pipe is needed and the rigidity and strength of the seam parts is a matter of importance. These re-enforce bars may be of any other suitable form, or they may be of a single piece instead of separate strips located upon opposite sides of the seam and adapted to inclose the seam parts.

Fig. 5 shows one form of flat-sided pipe, this particular form being square and having a seam along the middle line of its two opposite sides.

The invention may be embodied in yet other forms of pipe; but it is believed those shown serve to illustrate the principle of the invention and its application.

Although I have described this pipe as applied to the drainage of mines and similar works, it will be obvious that its utility is not limited thereto, and that it is applicable to the conduction of any kind of liquids and under any circumstances where such pipe would be effective.

What I claim as new is—

1. A pipe composed of a sheet-iron section shaped into cylindrical form with outwardly-projecting flanges along its opposite longitudinal edges, and a sheet-lead section similarly shaped and arranged within the sheet-iron section, with its flanges brought together face to face and secured to and between the flanges of the iron section.

2. A pipe composed of two or more sheet-iron sections, each shaped into the partial form of the pipe, with outwardly-projecting flanges at their longitudinal edges and provided with a sheet-lead lining, the sections being arranged in pipe form and their flanges secured together.

3. A pipe composed of sections of sheet-iron shaped longitudinally into pipe form and secured together along their longitudinal edges, and having a sheet-lead lining which is secured to the iron sections at their seams.

JAMES C. BAYLES.

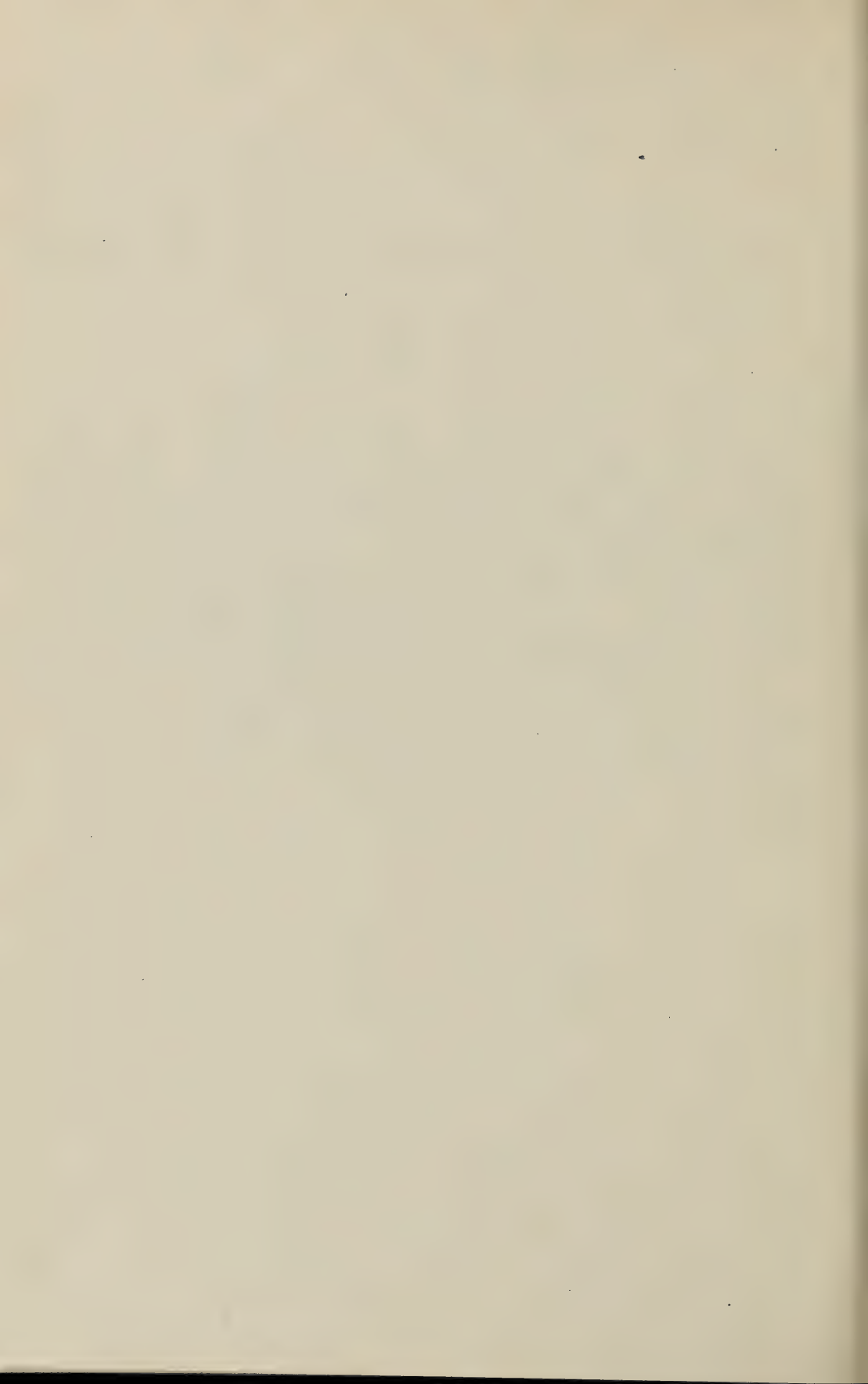
Witnesses:

FRANK E. HARTLEY,
ERNEST HOPKINSON.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit "H." Oct. 2, '12. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "H." Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "H." Filed Apr. 8, 1916. F. D. Monckton, Clerk.



No. 612,639.

Patented Oct. 18, 1898.

J. CLAYTON.

AUDIPHONE.

(Application filed Dec. 8, 1896.)

(No Model.)

Fig. 1.

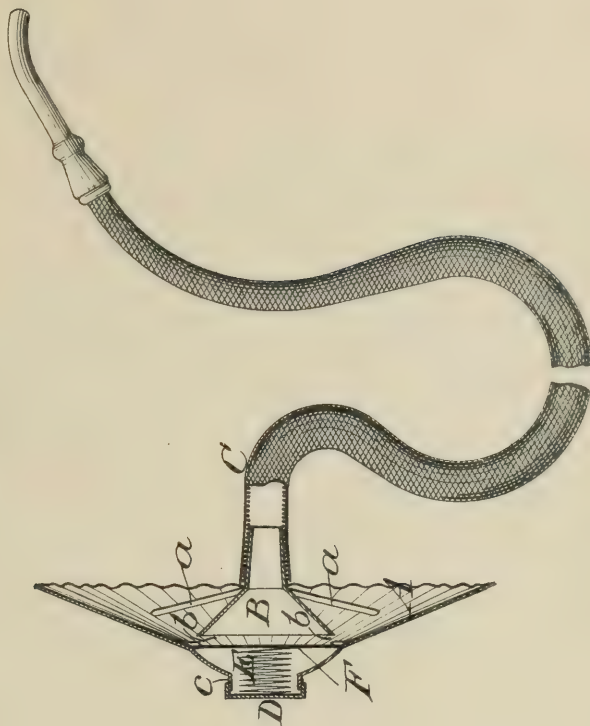
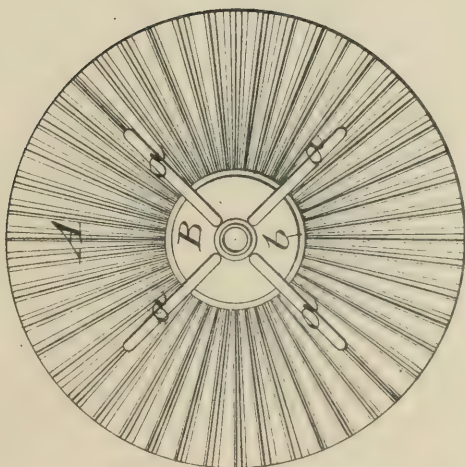


Fig. 2.



Witnesses:-

George Barry Jr.
Edward (Vice).

Inventor:-

James Clayton
by attorneys
Brown & Howard



JAMES CLAYTON, OF NEW YORK, N. Y.

AUDIPHONE.

SPECIFICATION forming part of Letters Patent No. 612,639, dated October 18, 1898.

Application filed December 8, 1896. Serial No. 614,868. (No model.)

To all whom it may concern:

Be it known that I, JAMES CLAYTON, of the city of New York, (Brooklyn,) in the county of Kings and State of New York, have invented a new and useful Improvement in Audiphones, of which the following is a specification.

I will first describe my invention with reference to the accompanying drawings and afterward point out its novelty in the claims.

Figure 1 in the accompanying drawings represents a central sectional view of one example of an audiphone embodying my invention and provided with a flexible ear-tube. Fig. 2 is a face view of the same with the flexible ear-tube omitted.

A is a conical disk, opposite to the concave face of which is concentrically arranged the trumpet-mouth B of a sound-conducting tube C, represented as a flexible ear-tube, the said trumpet-mouth having its concavity in the opposite direction to that of the disk and being so affixed to the disk, as by radial arms *a a*, that an annular opening *b* is left between the edges of said mouth and the face of the disk. In front of the central portion of the disk opposite the trumpet-mouth there is distended a diaphragm F of suitable material, as very thin steel, the edges of the said diaphragm being united with the disk A, so that the annular opening *b*, before mentioned, is also between the diaphragm and the trumpet-mouth.

The portion of the disk A which surrounds the trumpet-mouth B is, in the example of the invention represented by the drawings, corrugated in radial lines from the diaphragm to its own circumference. The said disk has a central opening, around which is a socket *c*, and to this socket is fitted a cap D. Between this cap and the back of the diaphragm is placed a light coil-spring E, which is made to press with more or less force on the diaphragm, according as the cap is adjusted on the socket toward or from the diaphragm.

The operation is as follows: The instrument is held by the listener with the concave face of the disk A toward the speaker or

source of sound, and the end of the ear-tube is placed in his ear. The sound-waves striking the disk are gathered therein toward the center thereof and are thereby directed over the diaphragm and into the trumpet-mouth of the conducting or ear tube, the vibrations of the diaphragm greatly assisting in the sound transmission. The adjustment of the cap D and the adjustment of the pressure of the spring upon the diaphragm thereby produced give the diaphragm greater or less tension and a more or less active vibration, which can be regulated as may be found desirable by the person using the instrument.

It has been found by careful and repeated experiments in the use of an instrument of this kind that as compared with a smooth conical disk the radially-corrugated disk is very much more effective.

What I claim as my invention is—

1. In an audiphone, the combination of a conical disk, a flexible diaphragm distended in front of the central portion of the concave face of and having its edges attached to said disk, and an ear-tube having a trumpet-mouth which is attached concentrically to said disk with its concavity in the opposite direction to the concavity of the disk and with an annular opening between its edges and the disk and diaphragm, substantially as herein described.

2. In an audiphone, the combination of a conical disk having a central opening, a flexible diaphragm distended in front of the concave face of and having its edges attached to said disk, an adjustable cap fitted to the central opening of the said disk behind the diaphragm, a spring located between the said cap and diaphragm for varying the tension of the diaphragm as the cap is adjusted, and an ear-tube having a trumpet-mouth attached to the said disk at the concave face thereof opposite to and spaced from the diaphragm, substantially as herein described.

JAMES CLAYTON.

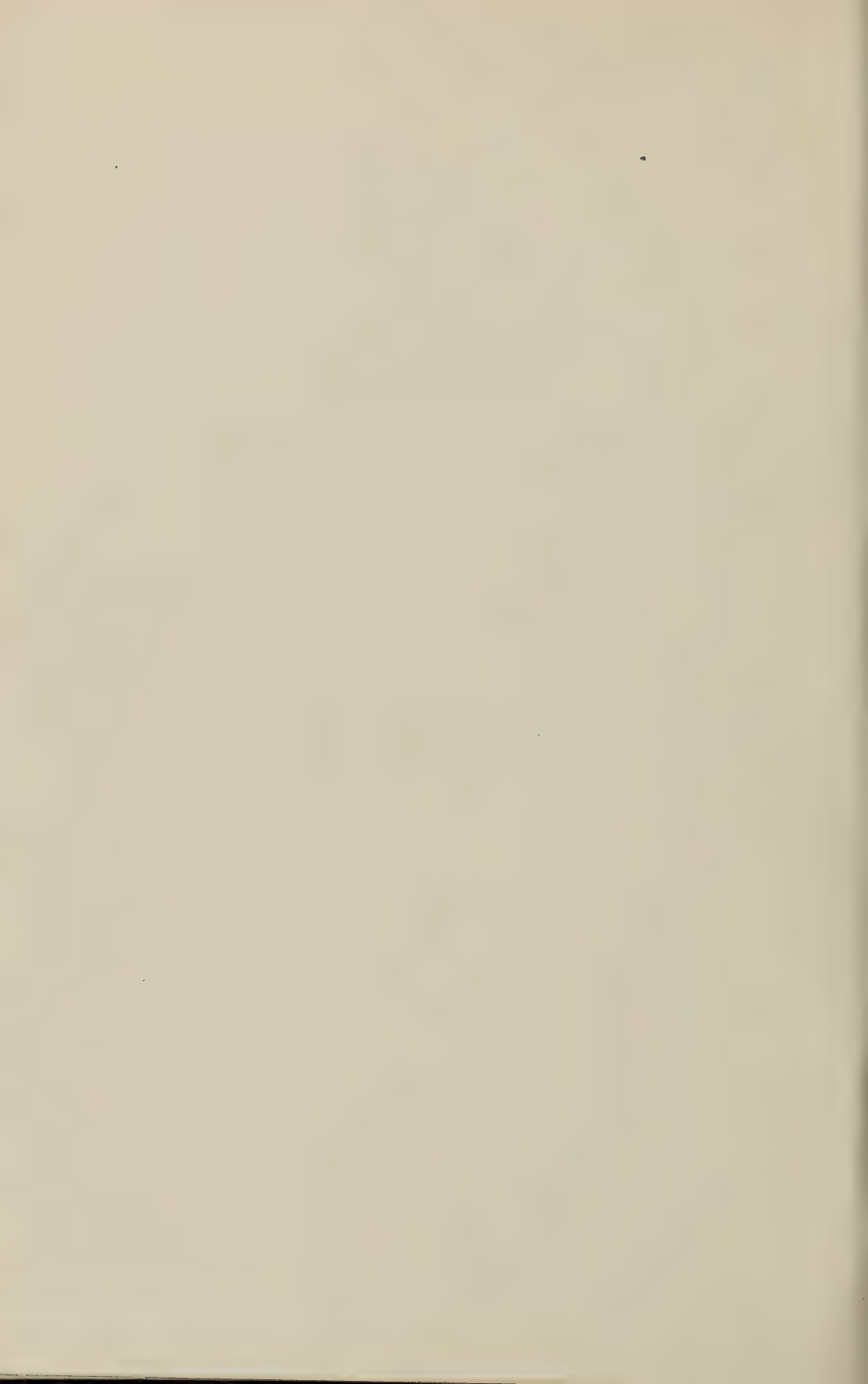
Witnesses:

FREDK. HAYNES,
LIDA M. EGBERT.

[Endorsed]: District Court of the United States, in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Clayton Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Clayton Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.



No. 738,342.

PATENTED SEPT. 8, 1903.

A. S. MARTEN:
INTERCHANGEABLE SOUND AMPLIFYING MEANS FOR TALKING
OR SOUND REPRODUCING MACHINES.

APPLICATION FILED APR. 7, 1902.

NO MODEL.

Fig. 1.

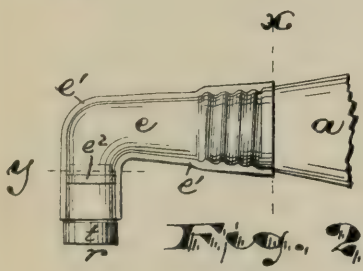
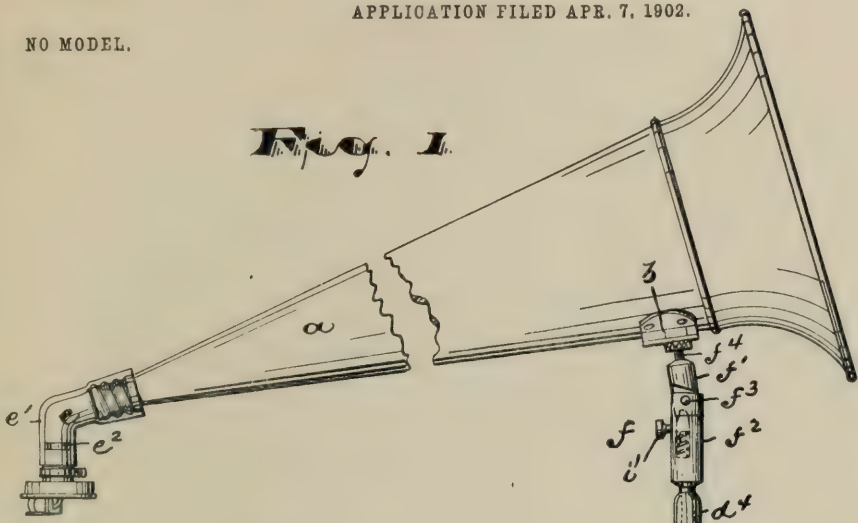


Fig. 2.

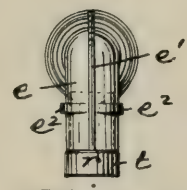


Fig. 3.

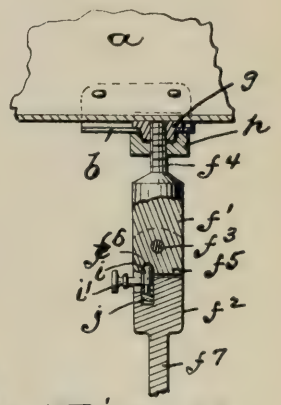


Fig. 4.

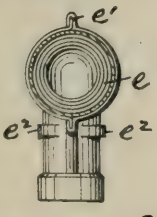


Fig. 5.



Fig. 6.

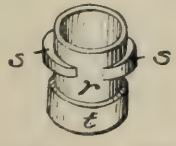
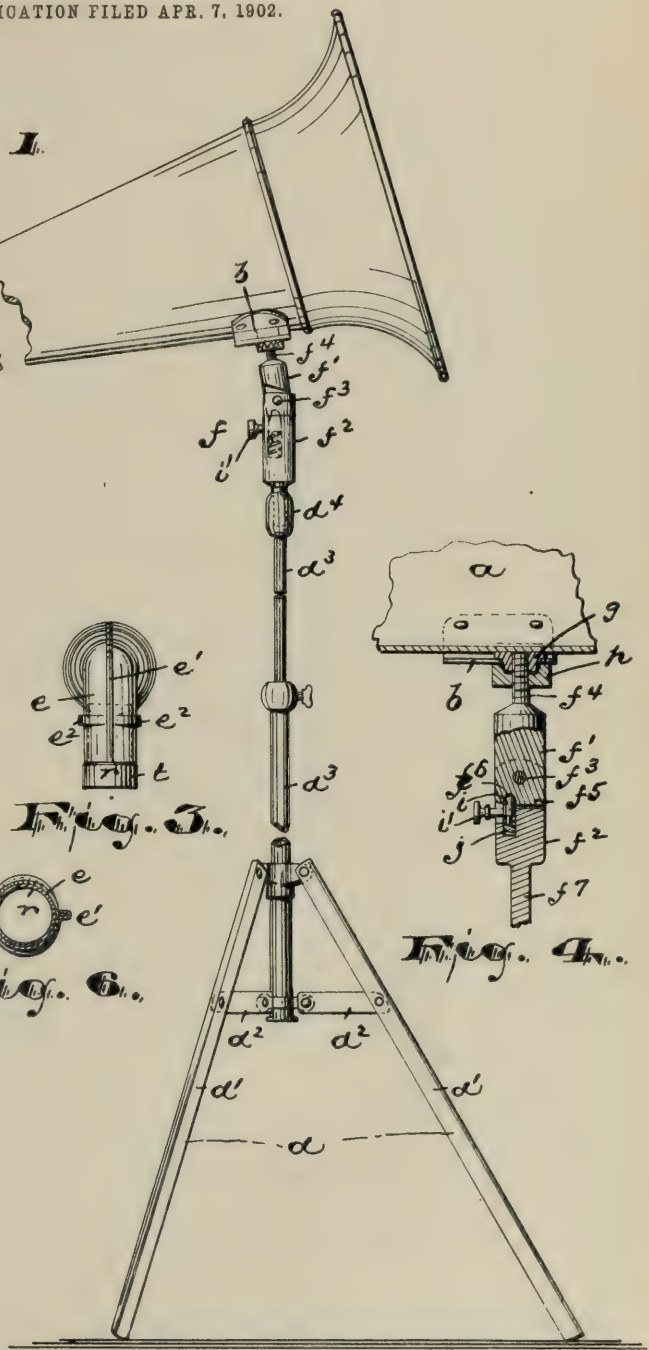


Fig. 7.

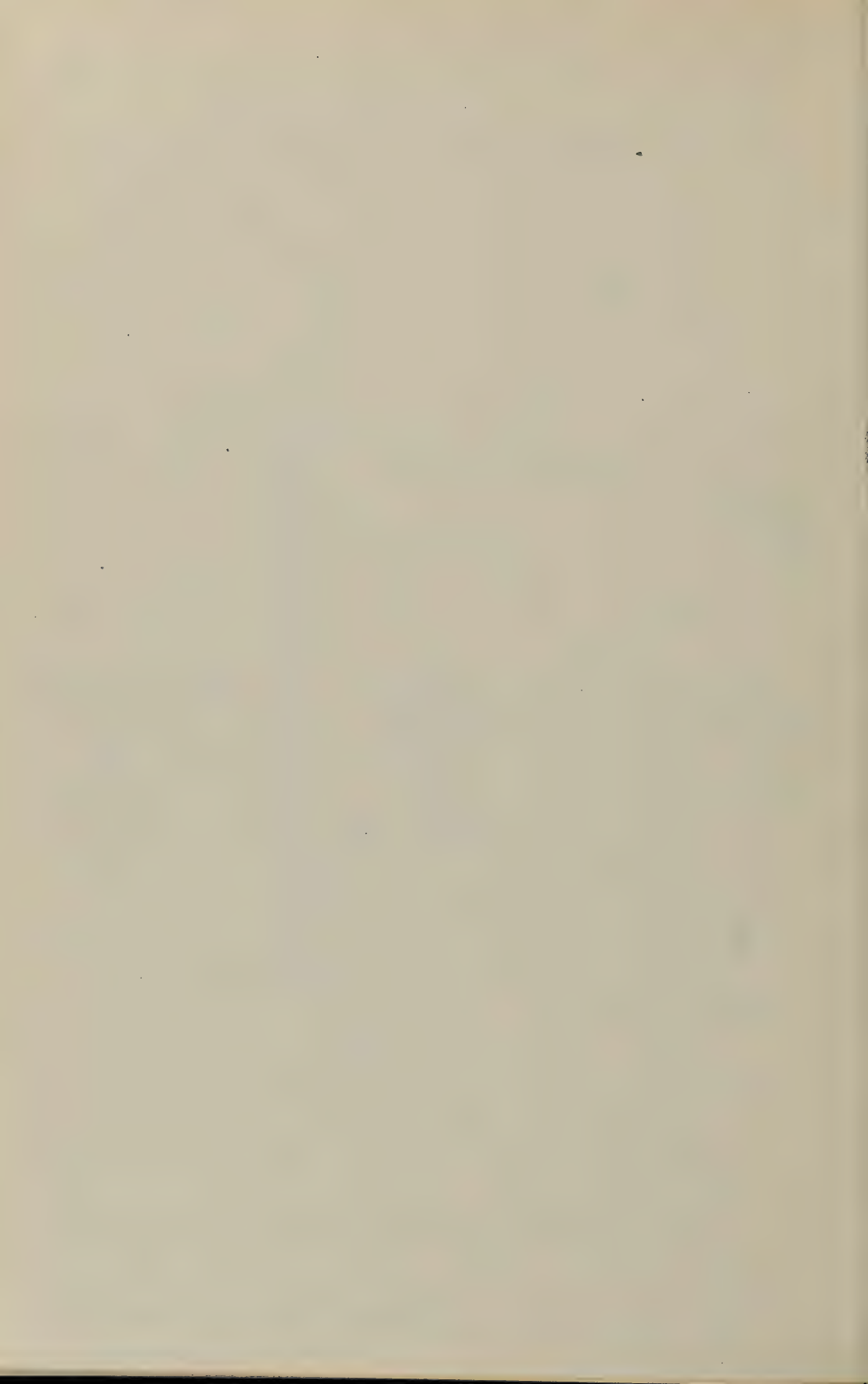


WITNESSES:

Harry Krug
Russell M. Everett

INVENTOR

Albert S. Marten,
BY *A. S. Marten*



UNITED STATES PATENT OFFICE.

ALBERT S. MARTEN, OF EAST ORANGE, NEW JERSEY.

INTERCHANGEABLE SOUND-AMPLIFYING MEANS FOR TALKING OR SOUND-REPRODUCING MACHINES.

SPECIFICATION forming part of Letters Patent No. 738,342, dated September 8, 1903.

Application filed April 7, 1902. Serial No. 101,648. (No model.)

To all whom it may concern:

Be it known that I, ALBERT S. MARTEN, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Interchangeable Sound-Amplifying Means for Talking or Sound-Reproducing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to certain improvements in that class of sound-amplifying connections for phonospheres, phonographs, graphophones, gramophones, and similar sound recording and reproducing machines illustrated in the application filed in the United States Patent Office January 24, 1902, Serial No. 91,032, the objects of the present improvements being to increase the convenience with which interchanges of the horn and talking-machines can be effected to facilitate construction and secure a more efficient operation of the parts and to obtain other advantages and results, some of which may be more fully and specifically referred to hereinafter in connection with the description of the working parts.

The invention consists in the improved interchangeable sound-amplifying means for talking or sound-reproducing machines and in the arrangements and combinations of parts of the same, all substantially as will be hereinafter set forth, and finally embraced in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts in each of the several figures, Figure 1 is an elevation showing a horn supported upon a stand, said horn being separably attached to the diaphragm-box or speaker of a sound-reproducing machine. Fig. 2 is a detail showing the small end of the horn, on which is a tubular metallic connection having a rubber or other elastic connection inserted therein. Fig. 3 is an end view of the same. Fig. 4 shows in detail an upper extension of the stand; and Figs. 5

and 6 are sectional views taken at lines *x* and *y*, respectively. Fig. 7 is a detail view of a certain elastic washer.

In said drawings, *a* indicates the horn, which is of the construction described in my said prior application, being provided at its small end with a screw-thread and near its large end with a socket *b*, adapted to receive the vertical center post of the stand *d*. Separably attached to the said small end of the horn is a short rigid metallic tube *e*, threaded in correspondence with the threads on the horn, and thus adapted to be screwed firmly and tightly to the horn, so that there will be no looseness at the joint conducive to vibration and an interference with proper sound reproductions. Said metallic tube *e* is also separable and independent from the diaphragm-box or speaker.

The stand *d* is preferably of the folding type, having legs *d'*, braces *d''*, and the center-post *d'''*, the latter being in telescopic sections. The center-post is provided at the top with a socket *d''''* for a separable extension *f*, the latter comprising pieces *f'* *f''*, hinged together, the hinge-pin being shown at *f'''* in Figs. 1 and 4. At the top of the upper section *f'* the same is threaded, as at *f''*, and provided with clamp-plates *g* *h*, one to enter the socket and the other to clamp the parts in rigid immovable relation, the second being preferably a finger-nut, threaded to properly engage the threads *f''*. At the lower end of the extension section or part *f'* the same is provided with a stop bearing *f'''* to engage the lower section or part *f''* and limit the pivotal movement of the upper member *f'*, so that it will stop when it arrives at a position of vertical alinement with the lower section *f''* and the post *d'''*. The said lower end of the section or part *f'* is also provided at *f''''* with a socket to receive the projecting end of a latch-bolt *i*, arranged in a spring-chamber formed in the section or part *f''*. Below said latch-bolt a spring *j* is arranged in said chamber to throw the latch-bolt into its locked position. The latch-bolt has a lateral finger-piece *i'*, by which it can be pressed down against the spring *j* to release the section or part *f'* to permit the turning of the member or part *f'* to a horizontal position and the horn to a vertical position, as hereinafter described. At the lower end of the part *c*

1163
section f^2 the same is reduced in diameter to form a leg f^7 to enter the socket d^4 , where it may be removably secured or allowed to rest free to be withdrawn at will.

By uncoupling the small end of the horn and pressing down upon the finger-piece i the horn will assume a vertical position because of the arrangement of the socket described, the small end of the horn overbalancing the large end and the latter lying uppermost. The vertical arrangement of the horn on the stand permits the horn to be set aside in a corner, where it will not occupy much floor-space and without detaching said horn from its stand, the bell thus lying free from the floor away from danger of injury.

The construction described, taken in connection with separable coupling-tubes suited to the machine with which the horn is to be used, enables a rigid connection to be made with the machine and yet permits of a quick detachment without removing the horn from the stand. The tubular connection preferred for the disk-machines and the phonosphere is angularly formed and pressed in half-sections from sheet metal, each section having a flange e' extending around the angle from one end of the tube to the other, one of the flanges being wider than the other, and thus adapted to be doubled over the other to hold the sections together, as shown in Fig. 5. At one end of each section of the tube e the metal is impressed with screw-threads which correspond, so that when the sections are joined the threads will be continuous spirals suited to receive the threads of the horn. At the opposite end of the tube the sections are indented or impressed to form hollow outwardly-projecting bosses e^2 . The cavities formed on the inside of the bent tube are adapted to receive stay ribs or lugs s , cast or formed on the periphery of an elastic washer r . Said washer fits closely within the end of the tube e and is held therein by the ribs or lugs s , which are adapted to spring into place in the cavities when the washer is forced into the tube. The elastic washer at one end is formed with an outward annular rib t on its periphery, which forms a shoulder against which the end of the metallic tube abuts. By this construction the tube e can be fitted closely upon the tubular extension of the speaker or diaphragm-box without danger of looseness due to variations in diameter of said tubular extensions or the interference with proper sound reproductions because of such looseness.

To change the horn from a phonograph to a phonosphere, for example, it becomes only necessary to withdraw the tubular extension suited to the phonograph from the speaker or diaphragm-box of said phonograph, unscrew the said tubular connection, the horn being

held at the desired horizontal position to facilitate the work, then apply the angular and threaded connection e by screwing it upon the horn, and finally pushing the cushion-like or elastic washer thereof upon the speaker of the phonosphere, thus enabling the one horn to serve with either of the various talking machines.

Having thus described the invention, what I claim as new is—

1. The combination with the horn and speaker or diaphragm-box, of a tubular metallic connection separable from the horn and having at its end distant from the horn an elastic washer having a detent holding said washer within said connection when withdrawing the same from the diaphragm-box and adapted to engage the said diaphragm-box, substantially as set forth.

2. The combination with the horn having threaded small end, of a tubular connection screwed at one end on said horn and thereby removably fixed against movement in the direction of the longitudinal axis of the said horn and at the opposite end having an elastic rubber washer fitted therein and adapted to receive the speaker or diaphragm-box, substantially as set forth.

3. The combination with the horn having a threaded small end, of a tubular connection screwed on said small end, and having at its end opposite that receiving the horn, an elastic washer, the connection being interiorly indented to form a hollow recess and the washer being provided with lugs to enter said hollow recess, substantially as set forth.

4. The combination with the horn, speaker, diaphragm-box and stand, of a rigid, angular metallic tube, interposed between said horn and box and separable from both said horn and said box, said tube being in section flanged and joined together at their edges substantially as set forth.

5. The combination with the horn, diaphragm-box and stand, of a coupling-tube adapted to be secured to the horn and provided with means to resist longitudinal movement, or movement both inward and outward in the direction of the longitudinal axis of the horn from the said horn, and having an india-rubber washer secured in the end thereof opposite that having said means for resisting said longitudinal movement and adapted to closely fit speakers or diaphragm-boxes of varying diameters, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 29th day of March, 1902.

ALBERT S. MARTEN

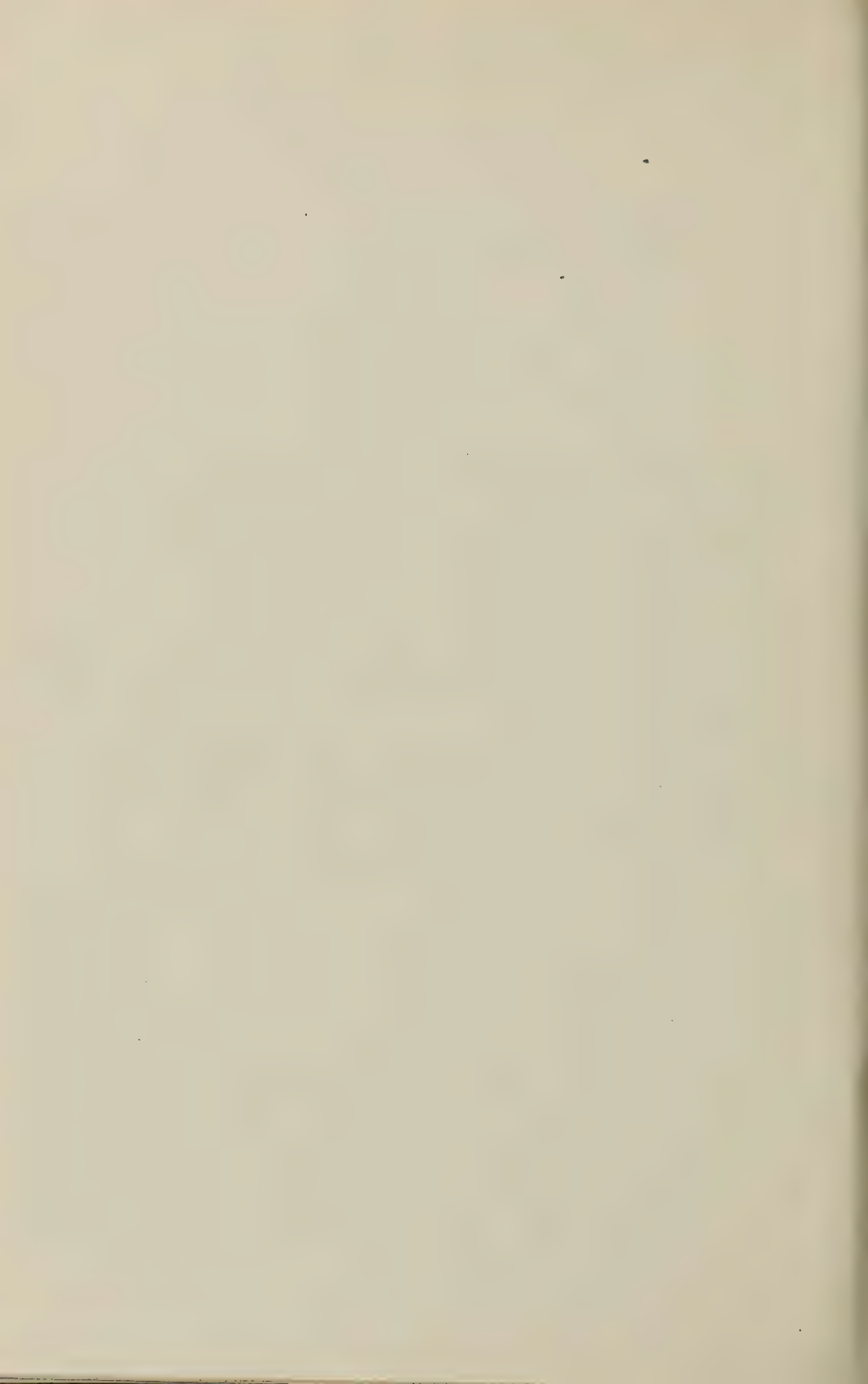
Witnesses:

CHARLES H. PELL,
C. B. PITNEY.

[Endorsed]: District Court of the United States, in and for the Northern District of California, Second Division. In Equity—No. 15,623. Searchlight Horn Co. vs. Sherman, Clay & Co. Defendant's Exhibit Marten Patent. Alexander Park, Notary Public.

Filed Jul. 27, 1914. W. B. Maling, Clerk. By J. A. Schaertzer, Deputy Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit Marten Patent. Filed Apr. 8, 1916. F. D. Monckton, Clerk.



S. TAKABA.
LAMP SHADE.

(Application filed June 24, 1901.)

(No Model.)

Fig. 1.

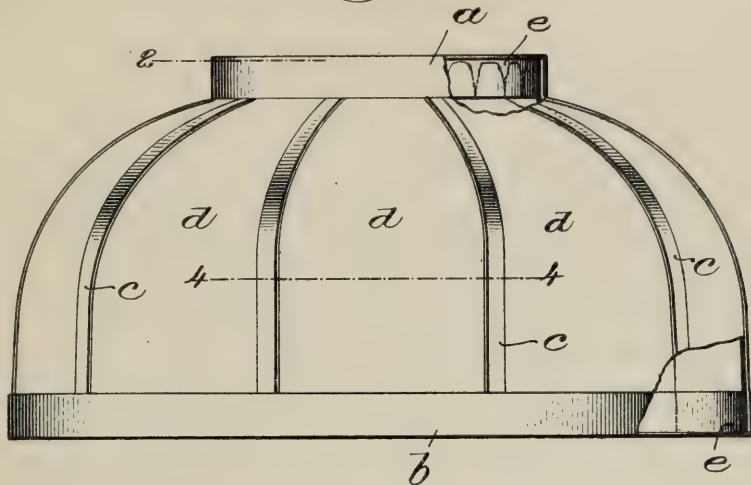


Fig. 3.

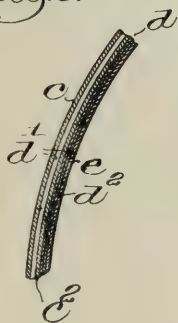


Fig. 4.

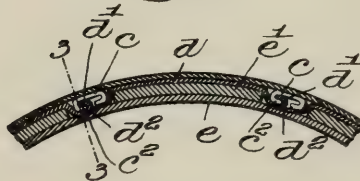
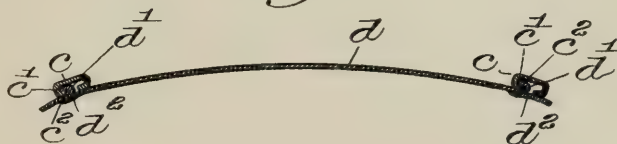
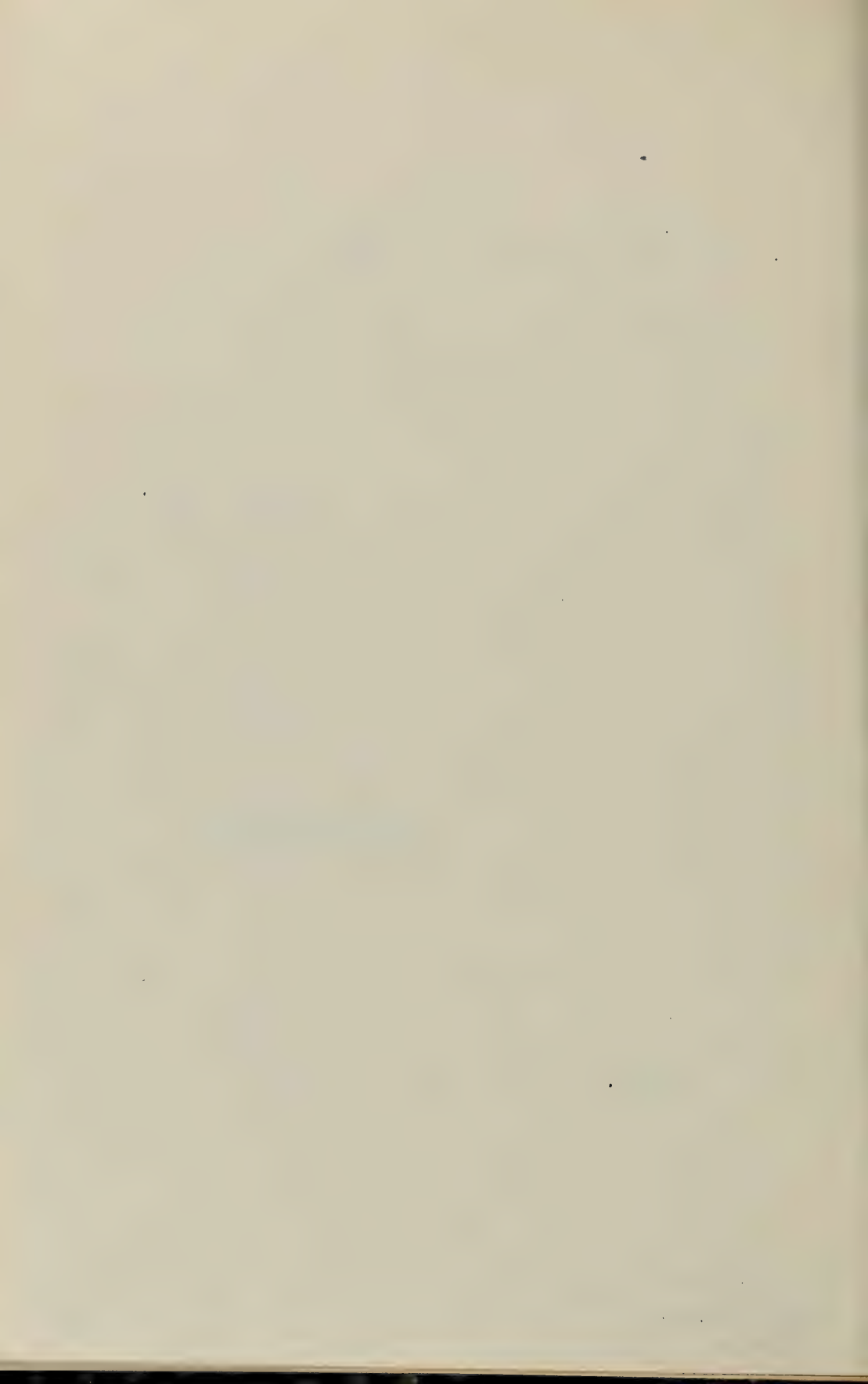


Fig. 5.



Witnesses:
Fred S. Grunke
Adolph Raier

Inventor,
Shiro Takaba,
by Henry Gregory
attys.



UNITED STATES PATENT OFFICE.

SHIRO TAKABA, OF BOSTON, MASSACHUSETTS.

LAMP-SHADE.

SPECIFICATION forming part of Letters Patent No. 693,460, dated February 18, 1902.

Application filed June 24, 1901. Serial No. 65,785. (No model.)

To all whom it may concern:

Be it known that I, SHIRO TAKABA, a subject of the Emperor of Japan, residing at Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Lamp-Shades, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is an improvement in lamp-shades of the kind called "Japanese" lamp-shades, in which a light frame is provided with panels or sections of ornamental material, usually of a translucent nature, commonly paper, which is hand-painted or otherwise decorated. Shades of this character have commonly been composed heretofore of a light wooden frame, to which the paper panels have been pasted. Such frames, however, are easily injured and rapidly deteriorate under the influence of the extreme heat from the lamp, so that they become brittle and easily broken, and also it is difficult to paste the paper panels in place and retain them properly on account of the curvature and materials. Accordingly I have devised the hereinafter-described shade of an exceedingly light and durable character, consisting of a metal frame containing specially-formed ribs, which receive the vertical edges of the panel in interlocked relation in such a manner as to give the shade permanence and stability of shape, while at the same time facilitating its construction and producing a trim and neat appearance.

The constructional details of my invention will be pointed out more fully in the following description, reference being had to the accompanying drawings, in which I have shown a preferred embodiment of the invention, and the latter will be further defined in the appended claims.

In the drawings, Figure 1 represents in side elevation a shade containing my invention, parts thereof being broken out for clearness of illustration. Fig. 2 is an enlarged horizontal sectional view taken on the line 2, Fig. 1. Fig. 3 is a transverse vertical section taken on the line 3 3, Fig. 2. Fig. 4 is an enlarged horizontal section taken on the line 4 4, Fig. 1.

As herein shown, the frame consists of upper and lower rings *a b* and vertical ribs *c*,

properly bent or arched, the whole, when of metal, being soldered or otherwise secured together. These inclose a plurality of panels *d*, although it will be understood that I do not restrict myself in all respects to the details of shape and arrangement shown. The ribs *c* are preferably of metal capable of being rolled inwardly to provide a longitudinal pocket *c'* or overhanging retaining-flange *c''* for receiving and holding the inturned edge *d'* of the adjacent panel.

It is difficult to paste a paper panel to a metal rib, and, as already stated, it is difficult to retain the panel in proper shape and position simply by pasting it or laying it flat against a rib; but by tucking in the edge *d'* of the panel and preferably cementing it in place behind the retaining rib or flange *c''* of the rib, as shown, the panel is secured properly in place and the operation is performed with a despatch and neatness not practicable in the old construction referred to.

Having secured one edge of the panel, as shown in Fig. 4, the adjacent longitudinal edge *d''* of the next panel is preferably lapped over and cemented or otherwise secured to the edge *d'*, which has thus been inserted and cemented in place, as shown clearly in Figs. 2 and 4, paper supporting paper readily. In this manner the succeeding joints between the edges of the panels are made until the whole shade is completed, the resulting construction being exceedingly strong, neat in appearance, definite and certain in shape and position, and with no possibility of separation of the panels from the ribs or frame. At their ends the panels and ribs are clamped between bands *e* and the rings, said bands being preferably of some suitable pliable material, pasteboard answering for this purpose in some instances, retaining-pieces *e'* being preferably interposed, and the whole held in place by any suitable means, some kind of cement being usually sufficient.

The frame being of metal is exceedingly durable, maintaining its vigor and strength notwithstanding the heat to which it is subjected by the lamp, whereas the kind having wooden frames gradually became brittle.

The shade is not only strong, but rigid and very light.

It will be understood that while I prefer to

construct the shade precisely as shown, yet I do not limit myself thereto, as many changes may be resorted to within the spirit and scope of my invention, as will be more evident upon

5 reference to the claims.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A lamp-shade, having its shade-surface
10 composed of ribs and panels, a longitudinal pocket being provided in each rib, a longitudinal edge of an adjacent panel being bent into interlocked engagement with the pocket of the adjacent rib, and means applied to said
15 longitudinal edge and distinct from said rib for maintaining said panel and rib permanently in their interlocked relation.

2. A lamp-shade, having its shade-surface composed of ribs and panels, said ribs having
20 longitudinal pockets in their under sides, one longitudinal edge of a panel being bent back

on itself and interlocked with the adjacent rib, and a longitudinal edge of the contiguous panel being secured to the back of the panel thus interlocked.

3. A lamp-shade, having its shade-surface composed of ribs and panels, said ribs having longitudinal pockets in their under sides, one longitudinal edge of a panel being bent back on itself and interlocked with the adjacent rib, a longitudinal edge of the contiguous panel being secured to the back of the panel thus interlocked, and a ring and band, the upper ends of said panels and ribs being clamped between said ring and band.

In testimony whereof have signed my name to this specification in the presence of two subscribing witnesses.

SHIRO TAKABA.

Witnesses:

GEO. H. MAXWELL,
WILHELMINA C. HEUSER.

[Endorsed]: No. 15,326. U. S. Dist. Court, Nor. Dist. of Cal. Dfts. Exhibit "C." Oct. 2, '12. M., Deputy Clerk.

No. 2306. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "C." Received Aug. 19, 1913. F. D. Monckton, Clerk.

No. 2759. U. S. Circuit Court of Appeals for the Ninth Circuit. Defendant's Exhibit "C." Filed Apr. 8, 1916. F. D. Monckton, Clerk.



[Second Edition.]

N^o 17,786

A.D. 1902

Date of Application, 13th Aug., 1902—Accepted, 25th Sept., 1902

COMPLETE SPECIFICATION.

Improvements in Phonographs and other Talking Machines.

I, HENRY FAIRBROTHER of 49 Kestrel Avenue, Herne Hill London S.E. Metal Trades' Valuer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- 5 My invention relates to that class of talking machine in which the reproduction of sound is produced by attaching a stylus to a trumpet, said trumpet being vibrated direct by the stylus from the record which carries the sound writing. The principal features of the invention are the method of attaching the said stylus to the trumpet, the material of which the trumpet is formed the formation of a longitudinal rib on the trumpet practically normal to the side thereof, the method of supporting the trumpet and of forming the joints therein and also the addition to the said trumpet of an internal tongue to increase the vibration.

- 10 My trumpet may be of any suitable form but is preferably cone or funnel shaped and is provided with a flanged or bell shaped mouth. I form the trumpet chiefly or entirely of sonorous material such as gelatine, indurated fibre, celluloid, paper or the like and compose it of one or more sheets of the same. By preference I make it of two or three sheets and of different materials, said sheets being in the form of layers or folds which are stuck together by any suitable adhesive substance. For instance, I may use a sheet of gelatine or cellulose material, backed up with a sheet of fibrous material such as paper, or of a sheet of cellulose material and a sheet of gelatine material stuck together. The object in using more than one sheet is for cheapness of manufacture as well as to improve the tone, as a certain thickness is required to obtain good results. I therefore use a thin sheet of the more expensive material and get the required thickness of the trumpet by
- 20 backing it up with cheaper material.

I employ several methods of forming the rib on the trumpet as well as several methods of attaching the stylus to the trumpet and also several methods of forming the trumpet from the sheet or sheets of material.

- I will now describe my invention with reference to the accompanying drawings in which:—

- Fig. 1 shows an elevation of a cone-shaped trumpet partly in section, provided with a bell mouth which trumpet is constructed mainly of gelatine, indurated fibre, celluloid, paper or any other suitable sonorous material. By preference I form it from one sheet of material with a lap joint or turnover seam, longitudinally and glued or cemented together

- This trumpet is fitted at its smaller end with a plug of suitable material such as wood, the end of which, projects outside and in which a hole is cut to receive a stylus which is preferably made of glass. The wood plug is preferably formed with a saw cut or split in order to give it a springy grip of the stylus. The wood plug is extended inside the trumpet in the shape of a thin flat tongue wider at its outer end to conform to the shape of the trumpet, to the walls of which it may be fastened if desired. This tongue greatly improves the reproductions but is not essential. If desired a small piece of cloth, leather or rubber may be held between the tongue and the wall of the trumpet where it is fastened or in contact
- 40 to still further improve the reproduction. The tongue is shown split as this further increases its usefulness and allows it to vibrate more freely with the walls

[Pyrre 8d.]

Fairbrother's Improvements in Phonographs and other Talking Machines.

of the trumpet. Instead of having a hole for the stylus, the plug may be provided with a point or pin over which a hollow stylus is fitted.

This drawing also shows one method which I adopt for supporting the trumpet from close under the bell shaped mouth.

Fig. 2 is a plan view of Fig. 1, the bell mouth and wide end of the trumpet not being shown. 5

Fig. 3 is a side elevation of another form of trumpet and shows a different method of attaching the stylus to the same. In this case a block of suitable material, such as wood, is inserted in the end of the trumpet and is centrally bored to receive the stylus which may be permanently or removably fixed therein. The drawing shows the stylus resting on a record of the usual cylindrical shape. 10

Fig. 4 shows a side elevation of a trumpet provided with a rib on its under side to which is attached the support of the trumpet and also a clip to hold the stylus.

Fig. 5 is an enlarged sectional view on the line *x* of the end of the trumpet and of the clip and stylus shown in Fig. 4. 15

Fig. 6 is a sectional view on the line *y* of the trumpet shown in Fig. 4 and

Fig. 7 is a sectional view on the line *z* of the trumpet shown in Fig. 4.

Fig. 8 shows a perspective view of a grooved block which I use by preference for the formation of the folded or pressed rib such as that shown in Fig. 6

Fig. 9 is a sectional view of a part of the body of the trumpet and shows how I arrange the various sheets, in this case three in number, forming the same so that their joints overlap and do not come directly underneath or next to each other. 20

Fig. 10 is a view similar to Fig. 9 showing two sheets only.

Fig. 11 is a side elevation of a complete phonograph or talking machine showing the relative position of the parts, the means I adopt of supporting the trumpet from its smaller end and the method of attaching the stylus to the rib at about half way up the same. 25

Fig. 12 is a sectional view of the rib of a trumpet, such for instance as that shown in Fig. 11 and shows a U shaped cap which is clamped over the rib to strengthen it. 30

Fig. 13 is a plan view of the talking machine shown in Fig. 11.

Fig. 14 is a side elevation of a trumpet formed from one piece or strip of sonorous material which has been wound round a cone-shaped form to produce the desired shape, the edges of the said strip overlap each other so as to break joints. A double thimble or cap like clip is fitted to the end of the trumpet and also carries the stylus. The larger end of the trumpet rests on a double or universal joint to give free lateral and vertical movement and is supported by a swing rod. 35

Fig. 15 is a front view of the larger end of the trumpet shown in Fig. 14 and more clearly shows the joint by which the trumpet has free lateral or vertical movement. 40

Fig. 16 is a side elevation of a trumpet made from two strips of material which are wound round each other the joints overlapping so as to break the same. This trumpet is provided with a rib on its under side and is fitted with a cap at its smaller end to which the stylus is attached. 45

Fig. 17 is a section of the trumpet shown in Fig. 16 and shows a form of rib which is attached after the trumpet is made.

Fig. 18 represents a method of forming the trumpet with a rib which may be rivetted or cemented.

Fig. 19 is an end view of the same. 50

Referring to Figs. 1 and 2 *a* is the trumpet fitted with bell mouth *a*¹ and at its smaller end with plug *b*, to plug *b* is fitted or fixed the tongue *b*¹ which is split as shown and as rubber or other suitable material *c* at its ends. The other or outer end of the plug is formed in the shape of a ball and holds the stylus *s*, said ball being split or cut at *h* to improve the grip. 55

To the wider end of the trumpet is fitted a band *d* provided with lugs carrying joint *e* to which is attached an inverted bearing *g* for the bracket or swing rod *f*

N^o 17,786.—A.D. 1902.

3

Fairbrother's Improvements in Phonographs and other Talking Machines.

thus making a universal joint and giving free lateral and vertical movement to the trumpet

Referring to Fig. 3. a is a trumpet of which the lower or narrower end only is shown, this end is fitted with plug b which is bored with a central hole c to which the stylus s is fitted. The stylus s is shown resting on the record r

Referring to Figs. 4, 5, 6, and 7 a is the trumpet fitted with bell mouth a^1 and rib k the upper part of which, k^1 has been folded or turned back against the trumpet a to allow the bell shaped mouth a^1 to pass over it. To the lower end of rib k is fitted clip l made of any suitable material which carries the stylus s . The stylus is preferably removable being pushed into a slot l^1 in the clip l . The stylus rests on the record or sound writing by gravity or spring tension.

Referring to Fig. 8. The block p is grooved as shown at p^1 , this is used to hold the folded or turned edges forming the rib k when made until the adhesive substance used in them has become hard or set.

In Figs. 9 and 10, the separate layers of material a , a^1 , and a^2 may be formed of different material, for instance a may be gelatine a^1 may be paper and a^2 may be of gelatine or any other suitable material. The ends or edges j of these separate materials do not lie directly over one another or in the same line.

Referring to Figs. 11 and 13, the trumpet a is formed with a joint or rib k shown in cross-section in Fig. 12, which joint is covered with a U shaped cap q which fits closely over the rib and holds the joint securely. This trumpet is hung from the small end and the stylus s is attached to the rib at a point / some distance from the smaller end of the trumpet. The rod o is fastened to the trumpet at a^1 which is hinged at a^2 to allow a free vertical movement about a^2 as a centre, the vertical rod o^1 is also pivoted at a^2 and rests loosely in the standard o^4 so as to allow a free lateral movement about o^4 as a centre. This standard is fixed to the base of the machine. The stylus s rests in the record by gravity and traverses the spiral sound writing of the record as it rotates. The record r may be turned by a suitable handle such as w^1 or it may be turned by clockwork or other suitable means.

Referring to Figs. 14 and 15 a is the trumpet formed spirally from a strip of material. At the lower end of the trumpet is fitted the double cap or thimble r one end of which embraces the trumpet and the other holds the stylus s .

To the wider end of the trumpet is attached a plate t formed with a lug m to which is jointed an inverted bearing g in which the spring rod o is free to work.

Referring to Fig. 16 the trumpet is formed from two strips a^1 and a^2 of material wound one over the other so as to break joints, the rib k may be attached afterwards as shown at k in Fig. 17.

Figs. 18 and 19 show another form in which I may make my trumpet, in this case the edges of the material are turned out and rivetted together as shown at r and a clip l is attached thereto to hold the stylus s .

I do not confine myself to any particular form or shape of the plug or of the tongue and the trumpet may be round, oval or any other suitable cross section.

In any of the above trumpets a single sheet or a sheet composed of more than one sheet of different materials stuck together may be used

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed I declare that what I claim is:—

1. A trumpet for phonographs or talking machines formed mainly of a sheet of sonorous material of a conical or pyramidal shape with a plug for attaching stylus fitted in its smaller end, said plug terminating in a vibratory tongue or plate, fitted to the inside of the trumpet, substantially as herein described and set forth

2. A trumpet for phonographs or talking machines formed mainly of a sheet of sonorous material of conical or pyramidal shape with a plug for attaching stylus fitted in its smaller end, said plug terminating in a vibratory tongue or plate

Fairbrother's Improvements in Phonographs and other Talking Machines.

fitted to the inside of the trumpet said tongue having a longitudinal slit to increase vibration, substantially as herein described and set forth.

3. A trumpet for phonographs or talking machines constructed mainly of a sheet of sonorous material and means for attaching the stylus by a plug in small end of trumpet with a hole in outer end of said plug for receiving the stylus, substantially as herein described and set forth. 5

4. A trumpet for phonographs or talking machines constructed mainly of a sheet of sonorous material and means for attaching the stylus by a plug in small end of trumpet with hole in outer end of said plug for receiving the said stylus, said plug being slitted or cut as shown at Fig. 2 for the purpose of gripping said stylus, substantially as herein described and set forth. 10

5. A trumpet for phonographs or talking machines constructed mainly of a sheet of sonorous material joined together by lap folded joints, cemented or glued and means for attaching stylus, thereto substantially as herein described and set forth. 15

6. A trumpet for phonographs or talking machines fitted with a stylus said trumpet being formed of layers or sheets of different sonorous material stuck together substantially as herein described and set forth.

7. A trumpet for phonographs or talking machines fitted with a stylus, said trumpet being formed of one or more sheets of sonorous or resonant material with a seam or longitudinal joint, such as described in various figures of drawings hereto annexed and substantially as herein of drawings hereto annexed and substantially as herein described and set forth. 20

8. A trumpet for phonographs or talking machines with a normal projecting rib and a stylus attached thereto, substantially as herein described and set forth. 25

9. The methods of attaching the stylus to the trumpet substantially as herein described.

10. A trumpet formed by winding two layers of strip material, as shown in Fig. 15 herein and a stylus attached thereto substantially as herein described

11. A trumpet formed by winding one strip of material with the edges overlapping into a cone or funnel shape substantially as herein described and as shown in Fig. 14 of the annexed drawings 30

Dated this 13th. day of August 1902.

HY. FAIRBROTHER,
33 Cannon St London. E.C. 35

A.D. 1902. Aug. 13. No. 17,786.
FAIRBROTHER'S COMPLETE SPECIFICATION.

(2nd Edition)

SHEET 1

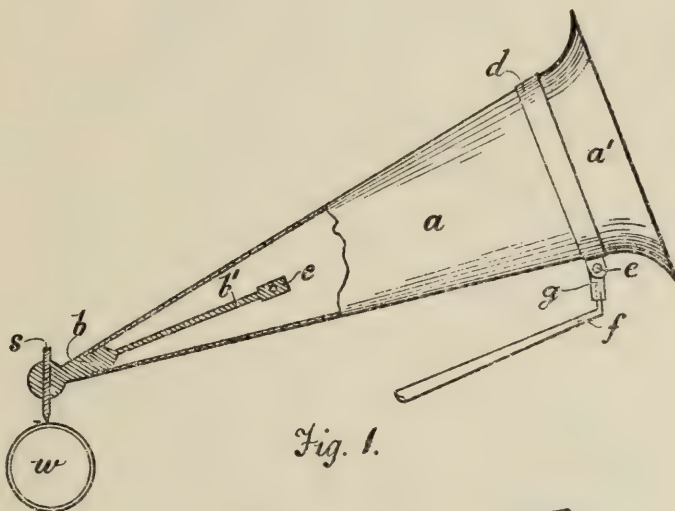


Fig. 1.

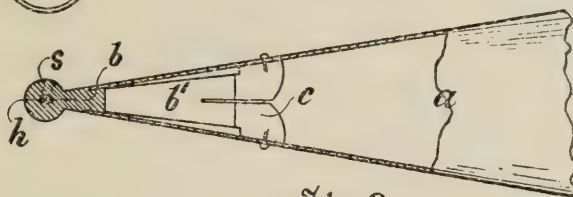


Fig. 2

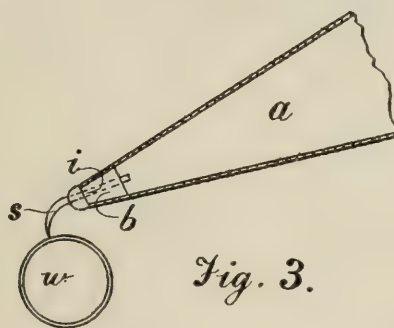


Fig. 3.

[This Drawing is a reproduction of the Original on a reduced scale.]

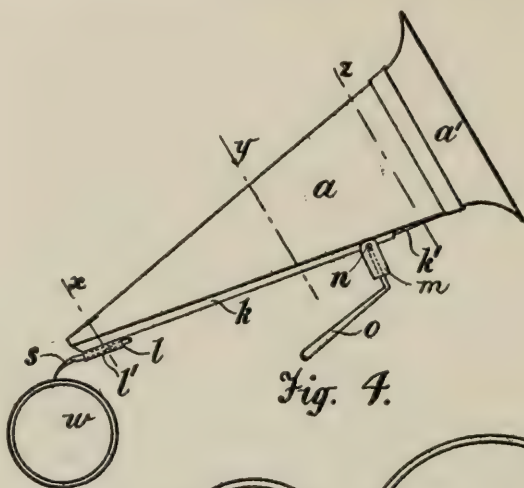


Fig. 4.



Fig. 5.

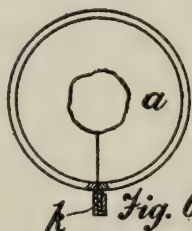


Fig. 6.

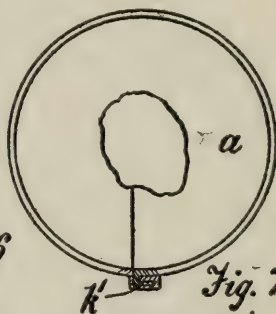


Fig. 7.

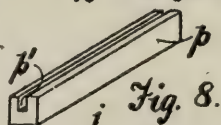


Fig. 8.

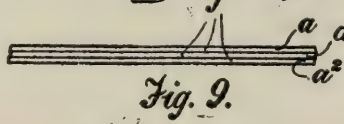


Fig. 9.

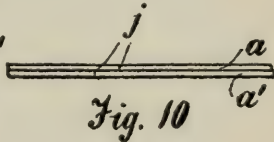


Fig. 10.

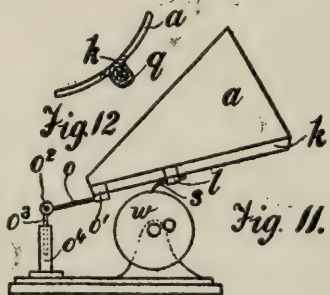


Fig. 11.

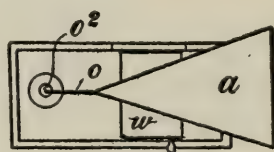


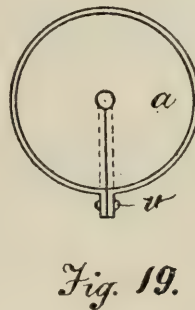
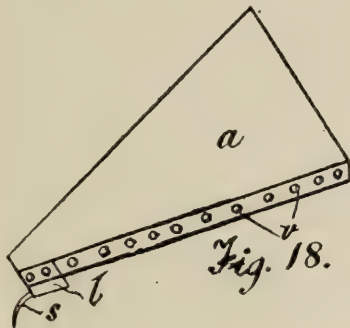
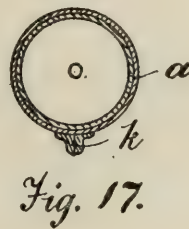
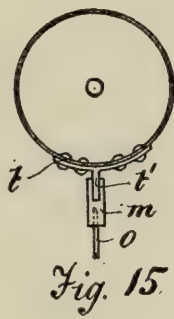
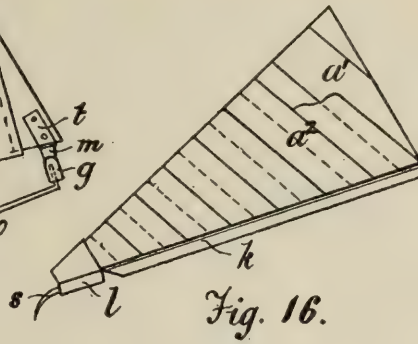
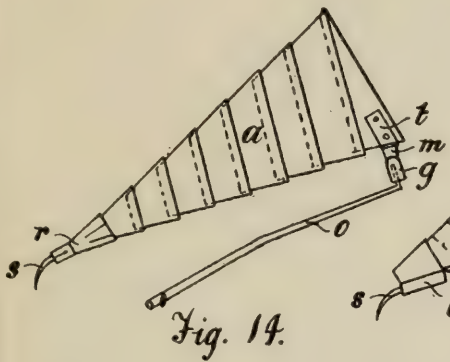
Fig. 13.

A.D. 1902. Aug. 13. N^o 17,786.

FAIRBROTHER'S COMPLETE SPECIFICATION.

(3 SHEETS)
SHEET 3.

(2nd Edition)



[This Drawing is a reproduction of the Original on a reduced scale.]

[Second Edition.]

N^o 20,567

A.D. 1902

Date of Application, 20th Sept., 1902

Complete Specification Left, 18th June, 1903—Accepted, 20th Aug., 1903

PROVISIONAL SPECIFICATION.

"Improvements in Phonographs"

I, JOHN MESNY TOURTEL of 146A Queen Victoria Street, London E.C. Consulting Engineer, do hereby declare the nature of this invention to be as follows:—

- My invention relates to improvements in or relating to phonographs. These improvements are primarily devised to render more efficient and satisfactory that type of apparatus in which a horizontal cylinder revolved by suitable apparatus, forms the support for the hollow cylindrical record, and the horn rests upon the surface of the said record by means of a stylus attached to its small end, which stylus follows the helical line traced by the recording point upon the surface of the record cylinder and thus reproduces the sounds inscribed thereon.

My improvements in this apparatus relate to the following points of the construction

THE COVER.

- In place of the exposed cylinder and partially exposed driving mechanism hitherto employed, I have devised a cover so arranged that all the working parts of the mechanism are enclosed without hindrance to their satisfactory operation. My cover which is of any convenient shape and preferably of sheet metal, is attached to the base plate of the mechanism by means of a long pin or bolt passing vertically upwards and provided with a milled nut, which nut is screwed upon the threaded end of the bolt which passes through the hole in the top of the casing. Similar apertures at the sides enable the insertion of the key and of the check screw, which prevents the revolution of the driving shaft. The end of the casing surrounding one end of the revolving cylinder is open and the record can be slipped into its place or removed therefrom without disturbing the cover. The cover is moreover slotted at the top, above the record, the said slot being of sufficient width to allow for the travel of the stylus from one end to the other of the record. By means of this cover, the working parts are efficiently enclosed, and the appearance of the apparatus is greatly improved.

THE HORN.

- The horn may be made of sonorous material in the well known manner. At the small end thereof, the stylus is cemented in or fastened to a plug fitted in the point of the said horn. I find that the preferable method of attachment is to cement the said stylus by means of a fabric and gelatine, or the like cement, to the material of which the horn is composed. But any other suitable cement may be employed whereby the stylus can be securely attached to the aforesaid plug, and this in turn intimately secured to the end of the horn. A further improvement relating to the horn consists in the means of supporting the same and imparting to it a sufficient pressure to cause the stylus to rest firmly upon the record. The horn itself being extremely light in proportion to its bulk, does not afford sufficient pressure by its weight alone. I therefore secure to the preferably metallic mouthpiece of the horn, a socket

[Price 8d.]

Tourtel's Improvements in Phonographs.

working in pivots and adapted to fit over a bent wire or the like support which is arranged to fit in a hollow socket formed by perforating one of the supporting feet of the base plate. The socket attached to the horn by its pivots is also attached to it by means of a spiral spring fixed in such a position that when the apparatus is in position with the socket upon the wire support and the stylus upon the record, the said spiral spring will be extended to the required degree to give the necessary downward pressure to the horn and thereby ensure the close contact of the stylus with the record. 5

THE STYLUS.

This portion of the invention is improved as follows. I provide a long stylus of suitable material. This stylus may be a solid one or it may be more conical in shape than that hitherto in use, and hollow internally. In either case, the length of the stylus is considerably increased over the ordinary construction, and the top of it is formed in the shape of a disc or ring, intimately attached to the diaphragm of the horn. 15

THE SUPPORTS.

In my improved construction, I provide firstly a support for the point of the stylus when the apparatus is out of operation. By this means, I can without dismantling the machine or leaving the stylus resting upon the record, or without providing another support for the horn, place the instrument instantaneously out of operation and return it to the working position again, equally quickly. The support for the stylus, consists of a little cup or box of any convenient shape, preferably secured to the top of the cover at one end of the slot for the stylus, already described. The bottom of this cup or receptacle is formed of some soft material, such as soft rubber, and upon this the point of the stylus can rest without injury. The supports of the base plate are formed in the shape of legs, preferably cast in one piece with the said plate, and three in number. On one of these legs is a hollow socket provided with a milled ridge on the outside, and internally threaded to fit the threaded foot cast in one piece with the plate. This socket serves to adjust the level of the apparatus. The front foot is formed hollow and serves as the socket for the end of the bar or wire supporting the horn. The upper edge of this socket is preferably notched to receive the cross pin in said support thereby holding the same rigidly in one position. The third leg may be adjustable or not, as desired. 20 25 30 35

Although in the foregoing, I have set forth the construction as found preferable at the present time, I do not limit myself to the details therein set forth: thus for instance, I may have more than three supporting legs, or I may attach my cover otherwise than by the long bolt described, and other alterations of design may be made, which are within the capacity of an experienced mechanic. But such alterations of the detail of the apparatus will remain within the scope of my invention herein set forth. 40

Dated the 20th day of September 1902

W. P. THOMPSON & Co.,
322, High Holborn, London. W.C. 45
Patent Agents.

COMPLETE SPECIFICATION.

"Improvements in Phonographs".

I, JOHN MESNY TOURTEL of 146A Queen Victoria Street, London E.C. Consulting Engineer, do hereby declare the nature of this invention and in what 50

No 20,567.—A.D. 1902.

3

Tourtel's Improvements in Phonographs.

manner the same is to be performed to be particularly described and ascertained in and by the following statement:—

My invention relates to improvements in or relating to phonographs. These improvements are primarily devised to render more efficient and satisfactory that type of apparatus in which a horizontal cylinder revolved by suitable apparatus, forms the support for the hollow cylindrical record, and the trumpet rests upon the surface of the said record by means of a stylus attached to its small end, which stylus follows the helical line traced by the recording point upon the surface of the record cylinder and thus reproduces the sounds inscribed thereon.

In order to make my invention more clear, I have illustrated it in the accompanying drawings in which

Figure 1 shews a side elevation of the apparatus in the operative position.

Figure 2 shews a plan view of the same.

Figure 3 shews an isometric view on a reduced scale of the cover.

Figure 4 illustrates a section of the trumpet on the line X—Y of Figure 1.

Figure 5 shews the stylus on an enlarged scale in section.

Figure 6 shews another construction of stylus, in section through the stylus and the resonator drum to which it is attached.

In these drawings, A indicates the base plate, B the detachable cover, C the cylindrical record, D the trumpet, E the trumpet support. The base plate A may be of cast metal and supports a mechanism for giving rotary motion to the cylinder 1, on which the cylindrical record C can be slipped; the aforesaid mechanism forming in itself no part of my invention, is not specifically illustrated in the drawings, it may be of any suitable or known type. The base plate A has preferably two rear legs and one front leg arranged as shewn in dotted lines in Figure 2. One of the rear legs 2 is an ordinary cast iron leg. The other one is preferably a threaded bolt and somewhat shorter than its corresponding leg, but covered with a hollow socket 3 provided with a milled ridge or other convenient means for readily revolving it, and threaded internally to screw upon the threaded leg 2. By this means, an easy adjustment for levelling the apparatus is provided. The front leg 4 is hollow and forms a socket for the trumpet support E. This trumpet support is preferably constructed (as shewn in Figure 1 of the drawings) with a little cross pin 5 adapted to engage in a corresponding notch in the top of the hollow socket 4, thereby holding the rod or wire E firmly in place. Over the upper end of the rod E the socket 6 is arranged to fit. This socket is attached to a rim 7 of the trumpet D by means of the pivots 8. The socket 6 is attached to the trumpet D by means of the spiral spring 9 for the purpose hereinafter described.

The novelty of the construction of the trumpet resides in the arrangement for strengthening the same by the reinforcement of its lower part in the manner especially illustrated in Figure 4. The material of the trumpet which may be conveniently celluloid, or any other sufficiently light and resonant material, is curved to join at the edges into the form required, said join being in the shape of a V-shaped ridge running the entire length of the trumpet from the lower edge of the rim to the junction with the stylus. By this construction, the need of any special strengthening bars or reinforcement of other materials is obviated.

The stylus shewn in Figure 1 and sectionally in Figure 5 is formed of a curved tube terminating in a point and fitting in a wooden plug in the apex of the trumpet. Another form of stylus is shewn in section in Figure 6. It is preferably of a hard material such as glass or metal. It is formed of greater length than the stylus hitherto in use. To diminish its weight and render it more sensitive, it is formed hollow and is attached to the drum 12 by means of the annular or disc-shaped head 11. The junction of the drum or resonator 12 to the trumpet D is preferably by means of a fabric soaked in gelatine, cement or glue, but any other suitable cement may be employed.

Towtrel's Improvements in Phonographs.

The cover B is so contrived that it can be removed from the apparatus or replaced without interfering with any of the working parts. Its general construction is illustrated in Figure 3.

The end of the cylinder 1 is arranged to project slightly through the circular aperture 13 leaving a convenient space for the manipulation of the cylindrical record which can then be inserted or exchanged without moving the cover. Above the record, there is provided the slot 14 which accords access to the surface of the record for the stylus. At one side of the cover is provided the receptacle 15 having a soft pad or plug of rubber or the like at the bottom thereof, and adapted to receive the point of the stylus when the instrument is out of operation. By means of this holder, the ordinary supporting fork and other more complicated devices are rendered unnecessary. The casing is formed preferably in one piece and is secured to the base plate A by means of a single bolt 16 having a threaded end and a milled nut 17 thereon. Other apertures are provided for the insertion of the winding key 18 on the one side, and of the check screw 20 on the other.

The general operation of the phonograph is well known and need not be here described.

The record having been placed in position upon the cylinder 1, the cover B being in place and the driving mechanism started, the stylus 10 is lifted out of its receptacle 15 and put in place through the slot 14 of the cover. In addition to the weight of the trumpet D, the stylus is further impelled against the surface of the record by the action of the spiral spring 9, according to the strength of which the stylus will be more or less pressed upon the revolving record. The sounds caused by the inscriptions on the record are thus transmitted through the resonator to the trumpet and given forth. The apparatus can be easily taken to pieces for packing or removal and as easily reinstated, the cover which entirely protects the moving parts being attached to the base by only one screw.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a phonograph: a casing covering the mechanism and record having an aperture corresponding to the end of the record through which the said record can be removed or replaced without disturbing the casing, substantially as set forth.

2. In a phonograph: a casing adapted to cover the mechanism and the record whilst allowing the record to be interchanged without disturbing the casing, said casing secured to the base of the mechanism by a single long bolt and provided with a pad or support for the stylus of the trumpet when out of contact with the record, substantially as set forth.

3. In a phonograph: the adjustable support E for the trumpet socketted in the hollow front leg of the base, substantially as set forth.

4. The combination and arrangement of parts forming the improved phonograph constructed and operating substantially as described and illustrated in the accompanying drawings.

Dated the 18th day of June, 1903.

W. P. THOMPSON & Co.,
322, High Holborn, London, W.C., and
6 Lord Street, Liverpool
Patent Agents for the Applicant.

A.D. 1902. SEP. 20. N. 20,567.
TOURTELS COMPLETE SPECIFICATION.

(2nd Edition)

SHEET 1

[This Drawing is a reproduction of the Original on a reduced scale.]

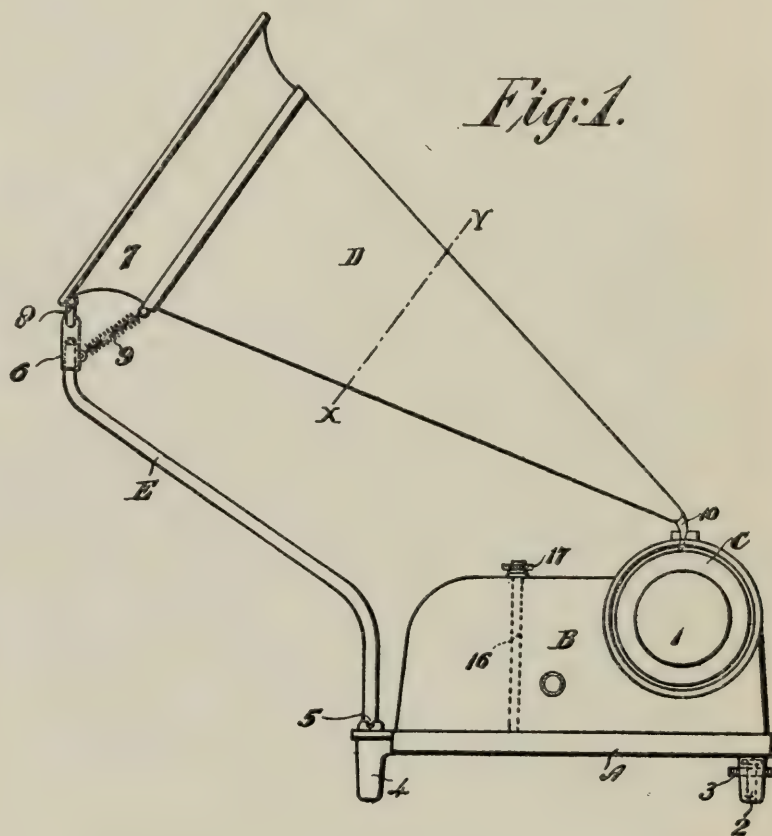


Fig. 3.

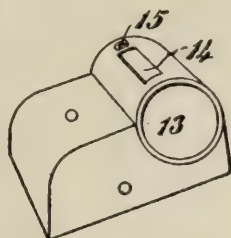


Fig. 2.

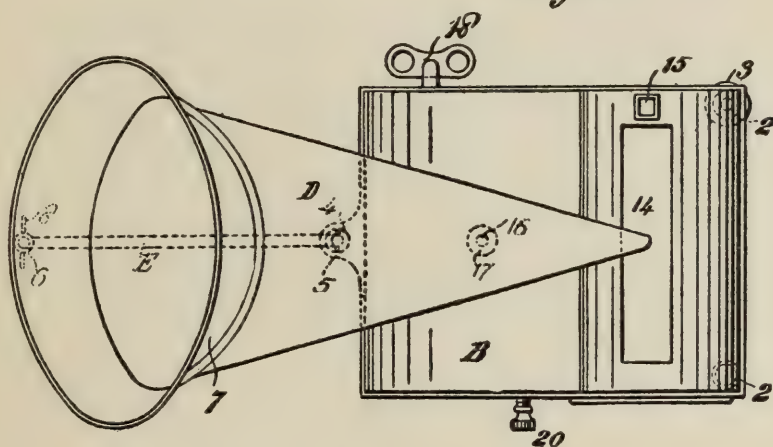


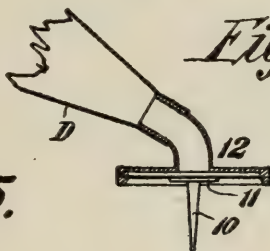
Fig. 4.



Fig. 5.



Fig. 6.



[Second Edition.]

N^o 5186

A.D. 1903

Date of Application, 5th Mar., 1903

Complete Specification Left, 19th Nov., 1903—Accepted, 31st Dec., 1903

PROVISIONAL SPECIFICATION.

"Improvements in Trumpets for Gramophones, Phonographs and the like"

I, **FREDERICK CHARLES COCKMAN**, of 5 Curzon Road, Muswell Hill, in the County of London, Journalist, do hereby declare the nature of this invention to be as follows:—

- My invention relates to trumpets for gramophones, phonographs, and the like. Heretofore such trumpets have usually been made of sheet metal and they have consequently possessed very inferior resonant qualities and in most cases a very objectionable metallic sound which obscures the qualities and characteristics of the sound of the instrument or voice whose tones are being reproduced. Sometimes papier mache trumpets have been employed, but these are dull and otherwise objectionable. I have found that by making the trumpet of wood, the qualities of the tone are greatly improved, metallic noises are avoided, distinct articulation is obtained, and minute vibrations are brought out, besides which a trumpet is obtained whose qualities improve with age.
- I preferably make the trumpet from pine wood such as is used for violins, mandolins, and the like, and I find it very advantageous to cut the wood in what is technically known as "on the quarter" so that the age rings form the grain. I prefer also to reduce the thickness of the trumpet towards the large end in order to more powerfully re-inforce the vibrations of the air in the vicinity of the large end. A suitable mode of construction is to make the trumpet in sections or longitudinal taper strips glued together at their edges.

Dated this 5th day of March 1903.

D. YOUNG & Co.,
11 & 12 Southampton Buildings, London, W.C.,
Agents for the Applicant.

25 COMPLETE SPECIFICATION.

"Improvements in Trumpets for Gramophones, Phonographs and the like."

- I, **FREDERICK CHARLES COCKMAN**, of 5 Curzon Road, Muswell Hill, in the County of London, Journalist, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

- My invention relates to trumpets primarily intended for use in connection with phonographs and gramophones, but applicable also to other sound producing instruments. Heretofore such trumpets have usually been made of sheet metal and they have consequently possessed very inferior resonant qualities and in most cases a very objectionable metallic sound which obscures the qualities and characteristics of the sound of the instrument or voice whose tones are being reproduced. Sometimes papier mache trumpets have been employed, but these are dull and otherwise objectionable. Wooden trumpets have also been used, but no attention has been paid to the construction of such trumpets

[Price 8d.]

Cockman's Improvements in Trumpets for Gramophones, Phonographs and the like.

to bring out the musical qualities thereof, and hence the result has not hitherto been satisfactory. I have found that by making the trumpet of wood, cut as it is technically called "on the quarter", the qualities of the tones are greatly improved, metallic noises are avoided, distinct articulation is obtained, and minute vibrations are brought out, besides which a trumpet is obtained whose qualities improve with age. This construction constitutes the novel feature of my invention. 5

I preferably make the trumpet from pine wood such as is used for violins, mandolins, and the like. In wood cut "on the quarter" that is to say, so cut that each sheet or strip radiates from the centre of the tree or log, a straight grain or reed obtains formed by the age rings which ensure perfect vibration. I prefer to reduce the thickness of the trumpet towards the large end in order to more powerfully re-inforce the vibrations of the air in the vicinity of the large end. A suitable mode of construction is to make the trumpet in sections or longitudinal taper strips glued together at their edges. 10

Referring to the accompanying drawing, Figure 1 is a longitudinal central section of a conical trumpet constructed according to my invention, and Figure 2 is a transverse section taken on the line x, x of Figure 1. 15

The trumpet A is made from a number of tapering strips or sections of wood a, a glued together at their edges. I have shown six such strips but there may be fewer or more than six. Moreover I have shown curved strips to produce a trumpet of circular section, but they may be flat, thereby producing a trumpet with any desired number of sides. The trumpet when completed is varnished with a suitable varnish which does not set too hard and so interfere with the vibrations of the wood. I prefer that the material of the trumpet shall have gradually decreasing thickness from the neck towards the large end or mouth, in order that it may act by its own vibrations to re-inforce the vibrations of the air in the vicinity of the large end. The strips of wood forming the trumpet are as before stated cut "on the quarter" and in this way the trumpet is treated like a musical instrument. 20 25 30

I do not confine myself to the use of strips of wood having straight edges as shown, as in some cases the edges may be arranged spirally or circularly around the trumpet.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is: 35

1. A trumpet built up of strips of wood cut "on the quarter" so as to obtain a straight grain, for the purpose specified.
2. A phonograph, gramophone or like trumpet constructed substantially as described and shown, for the purpose specified. 40

Dated this 17th day of November, 1903.

D. YOUNG & Co.,
11 & 12 Southampton Buildings, London, W.C.,
Agents for the Applicant.

A.D. 1903. MARCH 5. N^o. 5186.

COCKMAN'S COMPLETE SPECIFICATION.

(1 SHEET)

(2nd Edition)

Fig. 1.

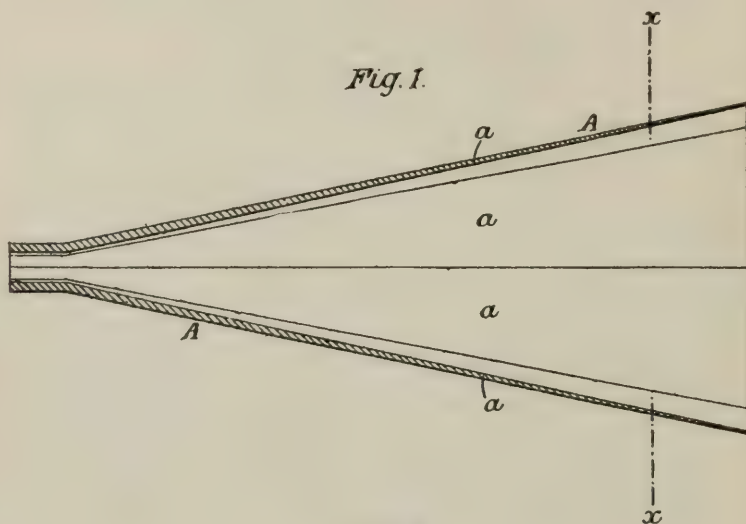
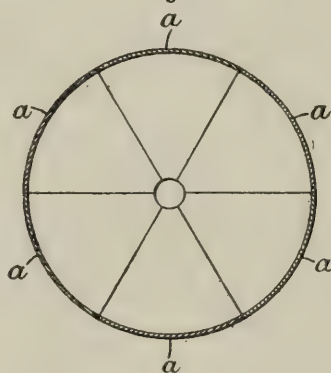


Fig. 2.



[This Drawing is a reproduction of the Original on a reduced scale.]



